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Canine Distemper Prophylaxis.*

By T. Dalling, M.R.C.V.S.

Although I have been asked to open the discussion on the results accruing from the new Laidlaw-Dunkin method of preventing canine distemper, I would like to point out that, much as I appreciate the honour the Division has bestowed on me, I have had little or no recent field experience of the disease or its treatment. My experience with the method of treatment has been to make the vaccine on a large scale by methods laid down by Laidlaw and Dunkin and to test the same for potency. However, I have been in close touch with many veterinary surgeons who have used the material, and the correspondence files are now becoming somewhat unwieldy; it is from a consideration and an analysis of these letters, etc., that I have been able to compile the remarks which I now intend to give.

I would be lacking in my duty to this Division if at this stage I did not pay a tribute on your behalf to the work of our veterinary friend Major Dunkin and his colleague, Dr. Laidlaw. By their painstaking, patient and thorough researches they have definitely established that canine distemper is caused by an ultravisible virus, and that by proper treatment of this virus a vaccine can be produced which will protect against the naturally occurring disease in the field.

In a word, the results of the use of canine distemper vaccine and virus on over 12,000 animals have been successful. The vaccine and virus have been used by several hundred veterinary surgeons on many thousands of dogs, and in about 99 per cent. of cases it would appear that the treatment has been marked with safety and efficacy. In the use of a biological product it is only natural that a percentage of mishaps or untoward results occur, and this has been found with canine distemper vaccine and virus. I summarise these mishaps under four headings: (1) reaction, distemper symptoms, deaths, etc., immediately following the use of vaccine or virus or both, (2) abscess formation following the use of these materials, (3) fits, symptoms of hysteria, etc., following vaccination, (4) so-called true distemper occurring some time after vaccination, *i.e.*, a breakdown of immunity.

(1) Reactions, etc.

In the literature issued with the distemper vaccine and virus the attention of the operator is drawn to the fact that reactions characterised by a rise in temperature, general malaise, etc., may be found shortly after the injection of vaccine or virus, especially virus. When such symptoms occur the usual history is that they are fleeting in character. I propose to omit references to these fleeting reactions and confine my remarks to reactions of a more serious nature, some of which result in the death of the animal. I refer to symptoms marked by profuse diarrhœa, persistent high temperature, nasal and ocular discharges, gastro-enteritis, nervous disturbance, marked wasting, etc., and I propose to consider them under what I think are the causes and shall deal with actual cases on which I have correspondence.

(a) *Failure to carry out the instructions issued.*

I feel that some veterinary surgeons, probably only a few, do not adhere strictly to the instructions issued. May I point out that the instructions were compiled from those recommended by the originators of the method and any alterations that have been made have had their approval.

Examples. A veterinary surgeon writing on the subject of the vaccination of ten foxhound puppies, said that on his attendance at the kennels the puppies were not properly isolated and that other puppies and hounds in another yard had distemper and had the same attendants. The veterinary surgeon carried on with the inoculation of vaccine and even gave virus. It is not surprising that four out of the ten puppies died from so-called acute distemper and that all showed marked symptoms.

Another veterinary surgeon recorded that "all the hounds' temperatures went up after vaccine. They became normal, so I injected virus. Several have been rather ill after the virus and some looked like typical distemper cases." Later he wrote: "A strange hound was put in the same kennels as the dogs to be vaccinated. This hound sickened with distemper and I think that it was the one which brought infection into the kennels before inoculation was carried out." You will observe that in this case the dogs were housed in kennels and were vaccinated there, although this method is decried in our instructions, and that the veterinary surgeon ran a tremendous risk by importing a dog which he was not sure was in a healthy condition.

These two examples are specimens of several statements which lead me to think that there is not sufficient care taken by all veterinary surgeons in the carrying out of the instructions recommended by the originators of the method.

(b) *Distemper-like disease already present before vaccination.*

To illustrate this point I quote from a report of Mr. A., who inoculated vaccine into several foxhound puppies, 60 per cent. of which showed a rise of temperature up to 105° within five days. He communicated with me *re* the advisability of giving virus. It was decided to keep the pups under observation; they all developed distemper (so-called); the virus of course was never given. Two died. *You will note they never received virus.* Later the veterinary surgeon wrote: "It appears to me that they contracted the disease after returning to the kennel 'from walk.'"

In another case a veterinary surgeon wrote: "I inoculated the dogs *yesterday with vaccine* and *to-day* the owner

* Paper presented to the South Eastern Division, N.V.M.A., in opening a discussion on this subject, at Maidstone, on 30th October, 1928.

tells me that three of them are running temperatures and pretty seedy. The symptoms are those of canine distemper." While I have a certain amount of hesitation in stating definitely that any of the dogs regarding which I have had correspondence, have actually suffered from virus distemper, I am willing to ascribe some of the cases to true virus distemper and give you these as examples in which the dogs were probably in the incubative stage before vaccination was begun.

(c) *Some latent infection other than distemper present.*

It is a great handicap to work on distemper that the symptoms seen in the field may be applied to diseases other than distemper. Those of us who have worked on experimentally produced distemper, know the symptoms of virus distemper well, but in the field complications soon arise which mask them. I am convinced that the term "distemper" is used with reference to a group of canine diseases many of which have no connection whatever with the distemper virus. It is a case similar to the name "influenza" being applied to a group of diseases in the human being of which we know little. Many years ago the name "typhoid fever" was used to cover what we now know to be a group of at least four different diseases. I am of the opinion also that dogs may harbour pathogenic organisms or viruses which may do little or no harm till the resistance of the host is lowered, when they are able to produce recognisable disease.

I will quote two examples of such latent infection. Nine dogs in one kennel and four in another were inoculated with vaccine and virus. The hounds in the latter kennel showed no untoward symptoms whatsoever, whereas those in the former sickened within three days after receiving virus, showing symptoms of gastro-enteritis; five died and four made a slow recovery. All dogs were done on the same day with the same materials. To my mind this is a clear case of latent infection in the group of nine. Another veterinary surgeon was able to immunise successfully the young hounds of a well-known pack, whereas he has not been able to have successful results in another well-known pack using the same vaccine and virus with the same precautions at both places on the same day. He has had deaths and symptoms of distemper following the virus in the latter pack. From both veterinary surgeons material for examination was forthcoming, and in each case organisms have been isolated which may have been the cause of the disesae. We were, however, unable to demonstrate the presence of the distemper virus. I would like to add here that I have been able to show experimentally that dogs thoroughly immune to distemper virus may still be infected artificially with *B. bronchisepticus* and exhibit symptoms indistinguishable from field distemper.

(d) *Mistaken diagnosis.*

We have several examples of so-called infections with distemper following immediately after the use of virus which are clearly not distemper. In this respect the opinion of the dog owner and not that of the veterinary surgeon, is that usually given. An example of this is a case recorded by Mr. X, where a dog died from pneumonia seven days after receiving virus which the owner stated "was undoubtedly distemper." Another case was that of Mr. Y, in which four dogs died from jaundice believed to be a sequel of distemper but which was undoubtedly leptospiral in origin.

(e) *Interval between vaccine and virus too short.*

It is clearly laid down by Dunkin and Laidlaw that an interval of seven days should elapse between the administration of vaccine and virus. We ourselves have shown that a longer interval may elapse and the resulting immunity is still good. A veterinary surgeon who evidently either did not read the instructions clearly or for some other reason injected virus three days after vaccine reported disastrous results. This is not surprising.

(f) *Weakly types of dogs—e.g., greyhounds.*

The statistics suggest that greyhounds do not withstand inoculation with vaccine and virus as well as do most breeds. It may be that these dogs are more delicately bred and have not the stamina of some of the other breeds. We have some examples of greyhounds reacting more severely to the virus than, say, foxhounds or terriers; for example, a veterinary surgeon records that no foxhounds out of fifteen couples showed any severe reactions, but withstood inoculation well, whereas several greyhounds treated on the same days with the same materials showed severe reactions for about twelve days and lost weight.

(g) *Probably true distemper due to the virus.*

Vaccine might conceivably not confer sufficient immunity to withstand the dose of virus given seven days later, because either the vaccine was not fully potent or the virus was too potent. Neither of these possibilities can apply to batches of prophylactic now being used in England, for every batch of vaccine is tested on several puppies before issue according to the Laidlaw-Dunkin technique. Further, each batch is distributed amongst many veterinary surgeons, and any real fault of either vaccine or virus would be immediately reported by large numbers of our colleagues. It may be, of course, that some rare puppies are constitutionally unable to respond quickly to the vaccine and produce enough immunity to tolerate virus a week later. This has never been proved, but it is a possibility.

2. Abscesses.

I have been struck with the rarity of the reports recording abscess formation following the use of vaccine or virus. True, the vaccine and virus are thoroughly tested for the presence of any viable organisms, still, although the utmost care may be taken in their administration it is very encouraging to know that few abscesses do occur. Simple abscesses with pus formation have been recorded by some veterinary surgeons: they respond easily to treatment. A more worrying type of abscess is the formation of a necrotic slough up to the size of an egg occurring several days or weeks after the administration of vaccine or virus. We have heard of them in a few cases, and in each case surgical interference has been necessary, in fact in five dogs I personally have removed the slough. Healing takes place rapidly. At this stage I am not prepared to give an opinion as to the causation. I have records of swelling of lymphatic glands in various parts of

the body some weeks after the use of vaccine and virus, but I am not prepared to accept that their occurrence had any connection with vaccination.

3. Fits, Hysteria Symptoms, etc.

Nine veterinary surgeons have recorded the association of fits or hysteria symptoms following vaccination against distemper. I have not been able to satisfy myself that in any case has there been any association between their occurrence and vaccination. Naturally, dog owners try to attribute the cause of hysteria, etc., to any treatment the dog may have had and I feel that much has been wrongly attributed to vaccine and virus. In one case, for example, I had an alarming letter from a veterinary surgeon telling me that the whole of the dogs which had received vaccine had developed hysteria the next day. Further correspondence showed, however, that other dogs in the kennels were affected before and after those vaccinated. May I appeal here for the use of common sense and the instruction of dog owners against attributing every symptom during the life of a dog to a previous vaccination. I would also like at this stage to point out that because of keener observation following the use of vaccine and virus, every appearance of dogs being off colour in any degree is noticed by the owner. Under ordinary circumstances these would have passed unobserved; now, however, they are called reactions due to the use of vaccine and virus.

4. So-called True Distemper occurring some time after Vaccination.

I have records of fifty dogs in groups ranging from one to twelve recorded by sixteen veterinary surgeons who say they were affected with true distemper from two months onwards after treatment by the Laidlaw-Dunkin method. In no case, however, have I been able to satisfy myself by experiment that the virus of distemper was present in the tissues of any of the animals I have been able to examine. It is of course possible that some of these dogs may have developed true distemper. As I have already remarked, the individual susceptibility of the dog to immunisation must be remembered and also that the virulence of natural virus infecting these dogs may vary very considerably. These alleged "breakdowns" are not alarming us unduly, for even if every case proved to be true virus distemper due to a breakdown of immunity, I feel that the method devised by Laidlaw and Dunkin would in no way suffer therefrom, because it would, at the worst, mean that only a very small percentage, well under one per cent., had failed to prove immune to natural infection, and such a result must be considered satisfactory.

The group of diseases broadly classified as distemper needs careful investigation and we look forward to the time when it will be possible for experts to say "this dog has or has not true canine distemper caused by the virus as described by Laidlaw and Dunkin."

The President (Mr. Henry Taylor) said that they had heard with great interest the elaborate opening of that discussion by Major Dalling, and he would call upon Major Pugh to give his results.

Major L. P. Pugh said that he would like to congratulate Major Dalling on his opening of the discussion. The latter had divided what might be called the accidents of vaccination into four classes: (1) cases in which vaccination was followed by severe symptoms and death, (2) cases in which abscess formation followed, (3) those followed by fits and hysteria and (4) those in which distemper developed after a long interval.

He had carried out rather a large number of vaccinations and had worked out something of a scheme which, in his hands, had proved very satisfactory from the point of view of eliminating the majority of those accidents. He must say that, although they started off by following very carefully the recommendations laid down by Dunkin and Laidlaw (the temperature taking, the observance of the weekly interval, etc.) they got some large reactions, but these were never so severe as to cause them any anxiety. Then they started to lengthen the interval slightly and later, when Major Dalling published a short note in the *Record* suggesting going to fourteen days, they increased the interval to ten days: they never went up to fourteen. After increasing the interval to ten days they found that they kept down these severe reactions to a minimum, but the one thing they had maintained all the way through was the necessity of a bi-daily reading of temperature after the vaccination. They gave the owner a temperature chart and a thermometer and got him to record the temperature morning and evening, and in that way they were able to keep a check on the reaction to vaccination and, more important still, to detect any dog that might be in the early stages of distemper.

He had seen several outbreaks following vaccination in the practices of other veterinary surgeons, and he was certain that in those cases vaccination took place at a time when the dog was already infected, and in two of those outbreaks the dogs had a type of distemper which was raging in the district at the time. It was very easy to vaccinate in the incubative stage, and it was only by adopting the bi-daily recording of temperatures both before and after vaccination that he had been able to prevent himself from doing so.

On the general question of taking due care in the process, if they got a large percentage of successful results they gained the confidence of their clients, and that brought along new ones. He had done over a thousand dogs up to now, and that had given him a fairly good opportunity to assess the value of the vaccination. If the animals ran temperatures during the ten days prior to the date that the injection of virus became due, he refused to administer it, but if the owners insisted that something further should be given, he injected the vaccine a second time and observed the dogs for a further interval of ten days before giving the virus.

With regard to abscess formation, he thought that the introduction of a large amount of dead animal material under the skin was the probable cause of that, in individual cases.

As to fits and hysteria following vaccination, he agreed with Major Dalling that, in the majority of cases, these were purely chance occurrences. On the other hand, he had always expected to get one or two cases of fits following at a definite interval of time—ten to fourteen days—cases of the post-vaccinal type in the human being, yet he had never met with such a case in a vaccinated dog. He thought that if such cases did occur they should be sent up to Mill Hill or to Major Dalling, for he was sure that the Medical Research Council would welcome such evidence.

With regard to the breaking down of immunity, the longest evidence of maintained immunity he could call was from the West Kent Kennels, where the puppies had been vaccinated for three years and where not one break-down in immunity had occurred. He personally had not seen a break-down in immunity so far. He was a great believer in the Dunkin-Laidlaw vaccination, and thought that it had a great future, provided that those who practised it took the precautions necessary to avoid putting the virus into animals that were in the incubative stage of the disease.

Mr. A. Whicher stated that the comparatively few cases he had had up to the moment had done exceptionally well; he had experienced no difficulty so far.

Mr. A. SPICER said that he was obliged to confess that his experience of the vaccine had been very slight up to the present moment and that he felt more like asking questions to secure information than seeking to add anything to what they had already heard. One thing he wanted to know was this ? Supposing they gave a dose of the vaccine to a dog that had distemper, would it have a curative effect ? [Major Dalling : " No "].

He asked that question because he vaccinated a puppy of his own the other day and (for one was apt to be rather less strict with one's own dogs) no temperatures were taken. That was on the Saturday, and on the following Friday the dog had a temperature of 104° F. On the following morning the temperature was down to 101.6, and after that it varied from 102 to 103.8. He thought that if he could, by giving the vaccine, shorten every attack of distemper in that manner, he would vaccinate every dog he came across, because that animal had thrived and put on weight every day since he was vaccinated. He had just done twelve Cocker spaniel puppies with vaccine and virus and, following Mr. Dalling's advice, he had allowed an interval of a fortnight. There had been no bad results at all. That suggested that in many cases seven days was not enough for the vaccine to give the full protection, and that fourteen days were really required : he would like to hear Major Dunkin on that point.

Another point which arose was this. If a dog got distemper in any shape or form, after the virus was given, was that distemper infectious ?

In regard to the question of the occurrence of hysteria after giving vaccine, there were those of them who held the opinion that canine hysteria was due to a virus. Numbers of dogs must be infected with that virus and yet did not show the symptoms from which that disease derived its name, but if a dose of this virus was given that might be quite sufficient to upset the balance and bring on an attack of hysteria.

Mr. CHARLES ROBERTS observed that he had vaccinated so few dogs that he feared he could not add anything of value to the discussion. One case of his, however, was followed by hysteria about a fortnight after the injection of the virus, but he did not attribute it to that virus or any other, but to dietetic error.

Major G. W. DUNKIN said that he had had no experience of field work personally, and he could only tell them, therefore, the results which had been reported to them from those gentlemen in the profession who had used the material. Reiterating largely what Major Dalling had already said, he was very sorry to say that in one instance particularly, breakdown had occurred, caused largely by the failure of the veterinary surgeon concerned to take the precautions specified.

Major Dalling had referred to reactions following the use of vaccine and virus and he elaborated these under four headings. He wanted that afternoon to speak particularly of the nervous affections following vaccination, because lately they had had quite a few cases of such conditions with which to deal. He had yet to meet with a case of fits—encephalitis—following vaccination, which was caused by the distemper virus. They had been able to investigate quite a few cases and, as he repeated (those of them who had read their papers would remember the statement) only fits which were caused by the distemper virus could be incriminated in this connection. In all those cases of fits following vaccination they had succeeded in no single instance in transmitting the disease to either the dog or the ferret.

With regard to so-called true distemper following vaccination, that was a very important category and one which deserved very careful consideration. No one had ever claimed that that method of vaccination against distemper was one hundred per cent. successful ; he knew of no form of vaccination against any disease, human or animal, which could be so described. They were bound to to get idiosyncrasies, and in support of that he would record the case of a Pekinese which had both vaccine and virus at the hands of an experienced veterinary surgeon, and which developed an illness six months later which was clinical distemper. The veterinary surgeon and the owner of the dog came to see them one day and he and his colleague thought that the disease looked like distemper. From that dog, which eventually died, they were able to induce distemper in the ferret through the injection of eye washings and nose washings. That case must go down as a definite break-down of immunity ; but that was not surprising, for they were bound to get such cases.

He was relieved, but not surprised, to learn from Major Dalling that with the large number of doses of vaccine he had used since March of this year the percentage of deaths and illness from all causes still remained less than one per cent. That was, he believed, quite the usual break-down percentage of most vaccination methods in respect of any disease. It was of greater frequency in the human subject, who presented curious pictures to the clinician who tried to put up an immunity against certain conditions. For example, measles usually set up a life-long immunity after a single attack, but there were people going about who never failed to contract measles if ever they happened to get into an infected area.

He wanted to make one appeal to veterinarians who had had the misfortune to come across alleged break-downs in this treatment. He wanted to appeal to them not to accept (he did not think that anyone in that room would do so) hearsay evidence from their clients as to what had happened to their dogs. He would ask them to be good enough not to be satisfied even with their own opinion, but to supply either Major Dalling or himself with full data of every case, with *post-mortem* specimens (if possible, the whole dog) so that they could investigate them and report in support or otherwise of the opinion expressed by the practitioner, or at any rate get to the bottom of the death and ascertain the cause.

He thanked the President for affording him the opportunity of speaking.

The PRESIDENT (Mr. H. Taylor) stated that he could only say that he had about eleven couple of the Crawley and Horsham Hounds to vaccinate, and the master had written to tell him that the results had been excellent, for they had not had one case of distemper this year, whereas prior to that they had lost about 50 per cent. chiefly from distemper.

He could bear out what Major Dalling had said about greyhounds. He had about twenty-five vaccinated greyhounds in a kennel, and when a dog with distemper was introduced some of them showed some symptoms of malaise. He did not like to put that down to distemper : they had diarrhœa and were a little off colour, though the temperature only went up a degree or so. But these occurrences did seem to bear out the contention that, by comparison with other breeds, greyhounds were bad subjects for inoculation.

With all other dogs the results had been uniformly successful : he had had no abscesses and no ill effects of any kind.

Major DALLING, in reply, said that he had very little to add to what he had already told them. He was very pleased that the few remarks he had made at the beginning stimulated a good discussion, and he felt that they were very fortunate in having with them Major Dunkin, one of the originators of the method they had been discussing that day. (Applause.) He personally was very grateful to him for the remarks he had made ; it gave one comfort to know that one's point of view was seen by a man like Major Dunkin and by practitioners like themselves.

He felt that the elucidation of some of those cases of breakdown would be most educative, and that from it would follow investigations into the diseases of dogs, other than those caused by the virus of distemper, which were producing symptoms which led to their erroneous classification as dog distemper.

No department of education has received less assistance from National funds. The veterinary profession has done nearly everything for itself.—*Scottish Farmer.*

Bovine Mastitis.*

By E. WILKINSON, M.R.C.V.S.

In opening a discussion on bovine mastitis one at once meets with difficulty as to where to begin the consideration of such a wide subject. Many different classifications have been adopted but, for our purposes, perhaps that which groups the different udder inflammations as chronic, subacute and acute (or perhaps better as chronic, acute and hyper-acute) is the most convenient. For the purposes of this discussion I shall confine my remarks more particularly to the acute and hyper-acute types.

Predisposing Causes. Renewed functional activity of the udder is undoubtedly an exciting cause.

Overstocking when "drying off" or incomplete emptying of the udder by incompetent milkers during normal lactation.

Hot muggy weather; exposure to extremes of temperature—so-called chill.

Infection. Takes place *via* the teat duct, the skin, or *via* the blood stream. Infection *via* the teat is probably by far the commonest method.

Traumatism probably plays a comparatively small part.

Infection by the blood stream is occasionally met with, particularly in cases of hyper-acute mastitis.

Ætiology. Streptococci, *Strept. mastiditis*, Staphylococci, *B. coli communis*, *B. pyogenes* are the most constant infecting organisms. Dr. Savage published his investigations of 36 cases of mastitis from different parts of the country in the *Journal of Comparative Pathology* (Vol. 22). He found that 75 per cent. were streptococcal, 16 per cent. staphylococcal and 3 per cent. due to *B. coli*. He stated that in the cases due to staphylococci one quarter only was involved as a rule and that the attack was usually mild. It is said that those cases of contagious mastitis one occasionally sees are caused by the so-called *Strept. mastiditis*. As a general rule the disease is sporadic, but from time to time what appear to be definitely contagious outbreaks are seen.

Symptoms. Constitutional symptoms may be, and often are, seen before any changes in the udder or its secretion are apparent. The animal ceases to feed and ruminate and the temperature may be anything from 104° to 108° F. Pulse is accelerated and small. The conjunctival mucous membrane is injected and the extremities are hot and cold alternately. The coat is harsh and stands on end. Rigors may be the first noticeable symptom; more or less pronounced lameness in the hind leg next to the quarter, which later shows inflammatory changes, has also been observed.

Local Symptoms are only too well known to us all and, of course, vary considerably among the different types of disease. The affected parts are congested, enlarged, tense, shiny and may be very painful; more or less intense induration is felt on palpation. In the very early stages only a slight colourless fluid can be milked from the affected quarter. This may later change to a flocculent secretion or may simply become hæmorrhagic; this latter is most often seen in hyper-acute cases. The odour of the exudate may be offensive or otherwise. If extreme swelling around the base of the teat occurs, so that little or even none of the exudate can be withdrawn, the symptoms are usually aggravated and necrosis followed by gangrene sets in. Abscess formation is a common sequel to acute mastitis and although this may mean the complete destruction of the affected quarter the unaffected quarters may be saved. The diseased quarter eventually becomes atrophied.

Prognosis. In hyper-acute cases this is very grave. The functional activity of the gland is certain to become more or less impaired. The most one can possibly expect is to save the life of the animal for the purpose of salving the carcase. In the more common acute type the life of the animal is in a certain amount of danger, but to nothing like the same degree as in the former type. The pathological changes taking place in the affected parts of the udder will almost invariably result in one or more quarters being lost and, once again, one must decide whether it is in the interest of one's client to go to much expense, or to butcher at once. Personally, I do not now attempt treatment in the hyper-acute cases, but advise slaughter at the earliest possible moment as, do what one will, one does not seem able to make the slightest impression on the course of the disease. In some fair percentage of the rather less virulent cases one should weigh up the pros and cons and put it to one's client to decide whether to treat or not. I often say, if the cow is in even fair condition, "Well, she would probably make £8 to £12 now for beef. If we go on and treat her she will most certainly lose condition badly and when we have done so she will cost you several pounds to get her back into her present condition. On top of that will be my bill for several pounds." As a consequence, quite a proportion of my cases go to the butcher without any treatment. This may sound bad business for myself. I am open to correction, but I believe that it is eventually good business and that my client appreciates it. I expect that I shall be "called over the coals" for suggesting that any of these cases may go for human consumption. That is a point on which I shall welcome comment. In any case, I am not the local meat inspector; that gentleman is the local sanitary inspector without any meat inspection qualifications whatever. What I should do were I the local meat inspector is another question altogether.

Preventive Treatment. Probably the best preventive treatment, particularly against those cases of the acute seasonal type occurring in the summer, is to dress the teat end with some fly-repelling ointment after each milking in the case of milking stock and to dress the teats of outlying dry cows about once or twice a week. For milking stock a touch of an ointment made up with soft paraffin and carbolic acid or creolin answers very well. For dry cows, I prefer iodoform in flexile collodion as being less likely to rub off. Affected cows should, where possible, be isolated. If that is not possible the affected animal should be milked last. It has been suggested that an examination as to the leucocyte content of the milk of fresh animals is desirable in determining the existence of latent infection. Cases of septic metritis and retained placenta should also be isolated. Routine vaccination of the herd either with stock vaccines or with an autogenous vaccine has not proved of any great value in my experience.

Medicinal Treatment. Local and general stimulants are indicated in the very early stages of the disease. Locally

* Paper presented to the Derbyshire Division, N.V.M.A., at Derby, on 11th July, 1929.

a mustard plaster left on overnight is of definite value in some cases, and will sometimes arrest or cut short what looked like being a bad case. However, one seldom sees these cases until they are well established. In these cases fomentations and *gentle* massage with either a stimulating liniment or a belladonna ointment are recommended.

In this connection it is perhaps important to point out that anything like vigorous massage in an acute case is simply asking for trouble. By such treatment what was more or less local infection may easily be changed into a septicæmia by breaking down the tissue and leucocyte wall which was being built up against the attacking organism.

Intramammary injections are useful in some cases: acriflavine solution, 1 : 1000, being quite the best in my hands. Chinosol, 1 in 2000 of sterile warm water, has been recommended. By the way, acriflavine is said to be of little or no use in *B. coli* infections. "Diamil" (Messrs. Genatosan Co.) has been highly spoken of. In my hands results have been very variable.

Systematic Treatment. In my view perhaps the best consists of the daily administration of formalin and sodium chloride 8 ozs. in one to two gallons of chilled water *via* the stomach tube. The effect of this is to bring about the removal of toxins by blood lavage. Also I always allow plenty of drinking water for the same purpose.

With regard to febrifuges, personally I never use any drug simply because it has the property of lowering the temperature. The modern view, as I understand it, is that fever is bound up with the production of immunity and is of definite use in helping to intensify the body's power of resistance to the causal organism. If febrifuges are used, those possessing internal disinfectant properties are probably useful, such as quinines and salicylates. Vaccines are at least rational treatment. In my hands they have been disappointing. Perhaps some of you have had a happier experience of them.

Surgical Treatment. Amputation of the teat may be most useful in some cases, although one frequently encounters some difficulty in persuading one's client to allow it. Amputation of the whole udder is, I think, rather a fearsome operation. The fraction of cases in which it is indicated is small. Should any of you who have not yet attempted the operation ever feel inclined to try it, I suggest that you first experiment with one or two dead cows. In any case one must expect a certain amount of surgical shock; still, one does get some surprisingly good results occasionally, and in cases where one felt certain that the only alternative was the death of the animal.

As you are aware, gentlemen, I have only touched lightly on many aspects of this very terrible disease, but I hope that I have at least set the ball rolling.

Discussion.

The President (Major Bagshawe) called upon Mr. A. Levie to open the discussion on Mr. Wilkinson's paper.

Mr. A. Levie remarked that here and there in Derbyshire a very large percentage of quarter troubles was found where a milking machine was being used, and he was anxious to learn from the members of the Association whether they had had any experience of a similar kind. The attack was of a very mild type, but had all the symptoms of mastitis. The attack did not seem to be confined to any particular quarter, but after suitable treatment at the end of the fourth day it was generally found that the udder returned to normal. He wondered whether this was due in some way to the use of milking machines.

In experimenting with co-called "autumn bags" a good remedy had been found by drawing out all the secretion, and after it had been thought that the canal had been cleansed of any bacterial life, the teat was sealed with a collodion solution, which, if properly applied, remained on a considerable time. His experience of vaccination had been the same as Mr. Wilkinson's.

Mr. H. W. Steele-Bodger said that he had found difficulty in making the collodion solution stick and he had applied dry carbolised vaseline every day.

He had a fair amount of experience with milking machines, but found it difficult to say whether they had any contributory effect.

He was going off the subject, but he wanted to draw attention to an anomaly under the Milk (Special Designations) Order, 1923, under the first paragraph of which a producer of Grade A milk might have his licence revoked if on applying for a Grade A (T.T.) licence, his cows reacted. He suggested that it should be altered as follows: "No animal known to have reacted to the tuberculin test should be added to a Grade A herd."

The members agreed to make a recommendation regarding this.

Mr. W. J. Ironside stated that he agreed in the main with Mr. Wilkinson. There was a general impression that only cows that had given milk were subject to mastitis, but this year he had met with cases in cows that had never had a calf and were not in calf. He had not found collodion very successful.

Mr. H. S. Cockburn thought that farmers should be persuaded to report any cases at an earlier stage. He preferred the stomach tube and formalin and salt method of treatment.

Mr. J. R. Bond (Visitor) said he was very glad of the opportunity of listening to the discussion on that important subject. He thought the public health aspect should be considered. About 20 per cent. of the milk supply was infected with organisms responsible for mastitis, and competitors in clean milk competitions had had difficulty, as often a high bacterial count resulted from the infection. He suggested that bromo-cresol purple test papers should be used as they might give an indication in the very early stages of an attack. With regard to milk machines, he felt that a very high standard of cleanliness and thorough sterilisation should be insisted upon. He suggested that the use of very rich nitrogenous feeding stuffs might have some effect.

Mr. Ironside agreed that this might cause trouble.

Major Bagshaw believed that every effort should be made to avoid draughts and chills in an attack. He thought that sealing the teats offered possibilities.

Statistics on Equine Tetanus.

According to statistics kept at the Royal Veterinary High School of Denmark, (*Maanedschrift for Drylaeger*, June, 1927, p. 305) from 1888 to 1927, a period of thirty years, the mortality from tetanus was reduced from 76 per cent. to 47 per cent. From 1888 to 1910, which was before antitoxin was used therapeutically, the losses were 76 per cent. From 1910 to 1915, the period during which only antitoxic treatment was used, there was not much improvement in the mortality, but after the latter date when subcutaneous injections of magnesia sulphate were given in addition to antitoxin the rate dropped considerably. It was, however, only during the period of 1915-1927, when large, repeated doses were given, that the low rate of 47 per cent. was attained.

This remarkable decrease in mortality is, however, not entirely attributable to antitoxin in large doses. The use of magnesium sulphate together with the present practice of giving tetanus patients no food whatsoever during the first two weeks is pointed out as having helped.

North American Veterinarian.

A Note on the Toleration of Farm Animals for High Doses of Iodine.

By J. B. Orr, A. Crichton and W. Middleton.
From the Rowett Research Institute, Aberdeen.

The practical application of results from recent research on iodine in nutrition has led to an extended use of iodides in the feeding of farm stock. Our knowledge is still insufficient to enable us to state the optimal amounts which should be fed to different classes of farm animals and there is a wide variation in the amounts recommended by different authorities. It is well known that the administration of large doses of iodides as a therapeutic measure for human beings, is sometimes followed by symptoms of iodism. In view of the increasing use of iodine in feeding, it seemed desirable to determine, for different classes of stock, the level of iodine feeding which could be maintained without producing harmful effects. For this purpose, the series of tests referred to below, was carried out.

Experimental.

Increasing doses of iodine were given to calves, pigs, sheep and poultry, over a period of several months, control animals being kept in each case on the same ration, but without the addition of iodine, and under the same conditions.

In order that both free iodine and potassium iodide should be included, a solution of the two latter was made in water such that 4 c.c. contained 1 gramme of "iodine." This stock solution was diluted as required to give the appropriate amount of iodine to be added to the daily food. In the case of calves the solution was poured down the throat of the animal from a bottle. The animals were kept under ordinary farm conditions and were fed on normal diets.

A summary of the experimental data is given in the following table, the amounts of iodine being expressed in grammes.

	Number of animals.		Initial dose per head per day.	Final dose per head per day.	Time in days during which iodine feeding was continued.	Total amount of iodine fed per day.
	Experimental	Control.				
Calves	2	1	0·25	4·25	94	229·25
	1	2	0·25	5·00	71	196·75
Pigs	2	2	0·25	5·75	116	335·00
Sheep	2	2	0·05	0·35	147	37·05
Poultry	4	4	0·01	0·31	91	14·26

After 94 days iodine was fed to the control calf for a period of 71 days, the two original experimental animals acting as controls. In each case the iodine was fed continuously, the dosage being increased by the amount of the initial dose, as a rule every six days in the case of calves, pigs and sheep, and every three days in the case of poultry.

Results.

Calves.—It was possible to dose a calf with as much as 5·0 grammes of iodine a day. No abnormal symptoms were observed until a dose of 3·5 grammes a day was reached. At this point, in one calf, the hair became patchy on one shoulder; thereafter, at a dose of 3·75 grammes, the two experimental animals became affected with dandruff and hair continued to fall out. The weight increase was not so well maintained and running at the nose was apparent in one case. No loosening of teeth or watering of the eyes was observed in either of the animals. On discontinuing the iodine after a daily dosage of 4·25 grammes had been reached these two animals quickly gained weight and recovered their usual condition. The original control calf which subsequently was given iodine did not show any of the symptoms above noted except running at the nose. All animals showed a strong disinclination to take a daily dosage above 4 grammes.

Pigs.—It was possible to give a pig in its daily ration as much as 5·75 grammes of iodine. There were no untoward symptoms of any kind noted beyond a disinclination to eat food to which the higher doses of iodine had been added. The increases in weight were normal, one experimental pig gaining more weight than the better of the two controls.

Sheep.—It was possible to give daily to sheep 0·35 gramme iodine in the food. Attempts to give a daily dose higher than this failed. The highest continued dose which sheep will comfortably withstand was 0·3 gramme. This dose was fed continuously for a period of 62 days. No signs of iodism were apparent, though, at the end of the experiment, the two animals getting high iodine were not in such good condition as the controls.

Poultry.—Increasing doses of iodine up to an amount of 0·30 gramme daily over a period of 90 days did not produce any ill effects on poultry. At a dose of 0·31 gramme daily one bird showed slight watering of the eyes while another moulted more rapidly then is usual.

Discussion of Results.

Where symptoms of iodism did appear they were identical with the classical symptoms that have been noted so often in human medicine and, as in the case of the human being, the symptoms were transient, passing off so soon as the administration of the iodine was stopped. It seems that doses of iodine up to 3 grammes a day in the case of calves, 5 grammes in pigs and ·3 gramme in sheep and poultry can be administered over long periods without any harmful effects on health or rate of growth. There is no evidence, however, to show whether or not these amounts, if continued throughout the whole life cycle of the animal, would affect breeding capacity.

The only recent work we have been able to find of the same nature as the above data, is that carried out by Hanzlik, Talbot and Gibson[1]. They fed 1 milligramme daily (corresponding to about 0·23 gramme daily for an adult of 70 kilogrammes) over periods covering from $\frac{1}{7}$th to $\frac{7}{12}$ths of the span of life. They concluded that there was no reason to believe that the prolonged use of iodine in these doses under ordinary conditions is detrimental. On the contrary, they observed beneficial results.

These heroic doses which we fed are from 10 to 100 times larger than the amounts which are necessary, even in iodine deficient districts, or which are recommended by competent authorities. There appears to be, therefore, a wide margin of safety both for experimental work and for feeding iodine in practice.

REFERENCE.

[1]Hanzlik, Talbot and Gibson. *Arch. Int. Med.* 42, (1928), 579.

From The Veterinarian, November, 1829.

Soundness in Horses.

By Mr. W. PERCIVALL.
(Read at the Veterinary Medical Society, October 21, 1829).

(*Continued from page* 1046.)

I take my leave of these legal interpretations of soundness, to enter on the consideration of the opinions broached by veterinary authorities. First stands Mr. Lawrence. In the ingenious pamphlet from which I have already borrowed some quotations, and at the beginning of the first chapter, we find these words: "The causes which constitute unsoundness in horses may be classed generally under the three following heads, *viz.*, Lameness, Imperfection in Sight, and Defective Respiration, or Diseased State of the Lungs. There are, however, two or three other imperfections, which cannot with propriety be included in the above series, such as Crib-biting, Wind-sucking, Shivering or Nervous Agitation, and Meagrims or Temporary Apoplexy." These are the propositions with which Mr. Lawrence sets out; and he speedily follows them up with a distinct consideration of cases of the different kinds of lameness and disorders; from the perusal of which I find I may come to the deduction, as Mr. L's rule of guidance, that lameness and disease are required to be actually present to constitute unsoundness.

Of such a conclusion, as far as it goes, neither the truth nor the justice can be disputed; the only fault I have to find with it is, that it does not go far enough to meet my views. If I mistake not, I shall be able to show that a horse free both from disease and lameness may yet be unsound. I am willing to admit that the line between soundness and unsoundness would be clearer and better defined could we draw it as proposed by Mr. Lawrence, but I apprehend it would not be found to reach the ends of many cases of practice.

From the recorded opinion of Mr. Lawrence's I pass to the consideration of Mr. Coleman's, which I find myself only able to get at through the reports of a recent law suit. The Professor is reported to have stated in evidence that, "whenever there exists alteration of structure and function of a part, and these alterations interfere with the duty of the whole, the animal may be considered unsound"; which physiological definition so pleased the judge, on the occasion on which it was delivered that, in summing up the case, he told the jury, Mr. Coleman's evidence "put the defence out of court."

With all deference to such combined high legal and veterinary authority, I cannot, myself, help viewing this definition as extremely defective. In regard to disease, the principal and general cause of unsoundness, were we to apply this principle of "altered structure and function in a part interfering with the duty of the whole," what would become of all the local maladies—those which are local both in their nature and in their effects? There are certain stages of glanders, mange, grease, ophthalmia, etc., in which, although the part is disordered, the whole is not, either directly or indirectly, or at least not so as to interfere with the duties of the machine; in fact, wherein (according to our own common remark) the general health and spirits and action remain undisturbed. Some diseases are, we know, local; others, constitutional; and others again of a dubious character, or at one time local, at another constitutional. Pray how are we to reconcile all this with "alteration of structure and function in a part interfering with the duty of the whole?"

Easy as it may have appeared for me to criticise the opinions of others, I really feel quite alarmed for the fate of this paper, when I look around and view the many objections that beset anything I can frame in the shape of a definition in my own mind. To define soundness, would not merely demand a precise line to be drawn between the states of health and disease, but that the animal should be represented in that effective state which from age, constitution, and external circumstances, he by nature ought or can be expected to be. The definitions we have been examining appear to me to be defective from not embracing both these considerations: at the same time I am ready to acknowledge that it seems extremely difficult to frame one of this comprehensive description, which, probably, would not turn out to extend farther than in reason could be admitted.

(*To be continued.*)

Mr. W. T. Olver, M.R.C.V.S., elected Mayor of Tamworth.

At the annual meeting of the Tamworth Town Council held on November 9th, Councillor William Tempest Olver, M.R.C.V.S., was unanimously elected mayor of the borough, and many tributes were paid to the splendid service rendered to the municipality not only by Councillor Olver himself but by "an old Tamworth family which has given in the persons of his revered grandfather and father, mayors to the ancient and loyal borough whose names are still remembered."

"Councillor Olver," says the *Tamworth Herald*, "is a native of the borough, being the son of the late Mr. Harry Olver, and a grandson of the late Mr. William Tempest, both of whom held the office of mayor, and were aldermen. Alderman Tempest was mayor in 1878, 1880 and 1900, and Mr. Harry Olver was mayor in 1888 and 1889. The newly-elected mayor was born in 1880. He was educated at Tamworth Grammar School, Godolphin School, London, and Oundle School. He afterwards proceeded to the Royal Veterinary College, London, of which he is a medallist, and graduated in 1901 with first-class honours. Proceeding twice to South Africa, in 1901 and 1902, he was attached to the R.A.V.C. during the South African war. In 1902 he joined his father in his practice of a veterinary surgeon at Tamworth, and on the latter's death in May, 1903, took over the practice, and his appointments of veterinary inspector for the counties of Stafford and Warwick. In August, 1904, Mr. Olver married Miss Ethel Florence Curtiss, who died in July, 1927. There were a son and a daughter of the marriage, the former now being in the Federated Malay States. Mr. Olver was again married in July, 1928, to Miss Irene Beatrice Readman, the mayoress.

"In August, 1914, Mr. Olver received a commission in the Royal Army Veterinary Corps, and was invalided out from France in September, 1918, with the rank of Captain.

"Mr. Olver was first elected to the Town Council in January, 1920, and has acted as chairman of two Committees. He is a Governor of Tamworth Grammar School, and a director of the Tamworth Herald Company, Ltd.

"For many years Mr. Olver was a member of Tamworth Cricket Club, of which he acted as Captain. He is keenly interested in and a player of tennis and golf. He formerly hunted with the Atherstone, the South Staffordshire and the Meynell Hounds."

An International Essay Competition.

The Ministry of Agriculture and Fisheries has received, through diplomatic channels, a translation of particulars furnished by the Asociacion General de Ganaderos (General Society of Cattle Breeders of Spain) in respect of an essay competition promoted by the Asociation. The Ministry, therefore, has furnished us with a copy of the memorandum, the object of which is to communicate these particulars to institutions, societies and bodies in England and Wales, who may desire to participate in this competition. The particulars are as follows :—

ESSAY COMPETITION.

The General Society of Cattle Breeders have decided to hold an essay competition on the following subjects :—

Theme 1. Contribution to the study of the increase of forage supplies in dry regions in thinly populated districts.
First prize : 1,000 pesetas and 1st Medal.
Second prize : 300 pesetas and 2nd Medal.

Theme 2. Influence of vitaminic factors in feeding, giving particulars ascertained from the writer's own experience.
First prize : 2,000 pesetas and 1st Medal.
Second prize : 500 pesetas and 2nd Medal.

Theme 3. Present position of information regarding epizootic abortion. Scheme of work and methods necessary for investigating this complaint. Means of ensuring efficacy of sera and vaccines and avoiding vaccination accidents and compensating breeders for losses in experimentation in the event of there being any such accidents.
First prize : 2,000 pesetas and 1st Medal.
Second prize : 500 pesetas and 2nd Medal.

It is not necessary to develop both parts of the foregoing theme. It will be sufficient if the writer devotes his attention to one of them.

Theme 4. Supply of milk in large towns. Methods of effecting this service under the best conditions for producer and consumer.
First prize : 1,000 pesetas.
Second prize : 300 pesetas.

Themes 2 and 3 are of an international character, and investigators of all countries may transmit scientific works in their own language, although, in order to facilitate reading and interpretation, it would be preferable to send them in Spanish, French or English.

The works are to be original and those which gain prizes will remain the property of the Society. If published the latter will supply 200 copies to the author.

The works are to be transmitted in a sealed and registered envelope before April 1st, 1930, to the Asociacion General de Ganaderos, Huertas 30, Madrid, the work to be furnished with a title (lema), and in a separate envelope, with the same title written thereon, a card or slip bearing the name and address of the writer.

The Veterinary Record.

30th November, 1929.

BOVINE MASTITIS.

The discussion on this subject initiated by Mr. Wilkinson before the Derbyshire Division of the N.V.M.A. emphasises once again the great economic importance to the Dairying industry of diseases of the cow's udder.

It is not too much to say that mastitis in all its forms ranks with abortion, Johne's disease and tuberculosis as one of the major causes of loss to the cattle owner. Actually, infection of the udder with pathogenic bacteria is far more widespread than is implied by the number of cases seen by the veterinary practitioner or even by the owner, for it is known that in a considerable proportion of infected animals the disease may exist in an occult form for long periods. Presumably, in such animals the procedure of regular and complete milking serves to prevent the appearance of obvious symptoms, but unfortunately there are no grounds for believing that the progress of the disease may be ultimately arrested in this way. Unfortunately, again, it has to be admitted that in many cases treatment proves to be unsatisfactory and fails to prevent the slowly progressive destruction of the milk-secreting tissues or the more rapid loss of the affected quarter.

For all these reasons research on diseases of the udder is urgently needed. Though considerable advances have been made in our knowledge, thanks principally to the efforts of German and American workers, much remains to be learnt. That more enlightened agriculturists in this country are keenly alive to the necessities of the case is proved by the valuable grants-in-aid which have been made by such organisations as the Royal Agricultural Society and the British Dairy Farmers' Association. The subject is assuredly a complex one for, while it is generally recognised that the majority of cases are due to streptococci, it is equally true that mastitis may be caused by other species of bacteria, some of which may even produce fatal results. This raises the question of differential diagnosis, since lines of prevention or treatment which may be effective in one herd or in one series of cases may be ineffective in others. The problem is essentially one which requires the collaboration of the stockowner, the veterinary practitioner and the laboratory worker, and it is to be hoped that teamwork of this sort will succeed in clearing up many of the obscure points and lead to satisfactory methods of control.

The subject of mastitis has been placed upon the programme of the International Veterinary Congress

to be held in London next year and this will afford observers from different countries an opportunity of expressing their views and experiences.

PROGRESS BY (ESSAY) COMPETITION.

There is a whole-hearted thoroughness, yet without suggestion of presumption, in the adoption by a body of agriculturists of the still novel idea of the International essay competition, and its applica'ion by the General Society of Cattle Breeders of Spain to the task of solving some of the problems which confront agricultural and veterinary science in that country commands our approval and support. Our commendation is earned not primarily because of the wisdom of the promoters in seeking to secure for Spain views and experiences obtainable from other countries, nor because we are impressed with the obvious fact that an extension of this principle would hasten enlightenment concerning a number of the difficulties which beset mankind. What we deem of particular value is the emphasis it supplies to the great lesson of the almost contemporary International Veterinary Congress that in our special sphere, as in every other, knowledge knows no national boundaries, and that every concentration of international information must radiate light and benefit throughout the veterinary domain.

In this connection, it is significant that the General Society of Cattle Breeders of Spain has been able to enlist the august aid of the diplomatic channel in transmitting to our own and countless other columns, through the further medium of our Ministry of Agriculture, the details of the competition which we reproduce elsewhere in this issue. Of the four themes, for contributions upon which substantial money prizes are offered, two are of an international character, and one of these—that concerning epizootic abortion—is of outstanding importance to the live-stock industry of this country. If the extent of their experience of this disease is any measure of their chance of success in this theme, then the prizes may well fall to British entrants. But we feel that such will share our view that the money-prize-winning factor, if it is not somewhat distasteful in this connection, is at least insignificant in comparison with the opportunity afforded them of contributing from their store of knowledge and experience towards the elucidation of one or more of these problems, to the benefit not only of Spanish cattle breeding, but of the livestock industry of their own country and of the progress of veterinary science throughout the world.

The Future of the Professions.

In the course of a striking article entitled "Are the Professions Doomed?" recently contributed to *The Daily Express*, Brigadier-General Crozier says:—

"I am told that it is not difficult to become a barrister, a doctor, or a veterinary surgeon, provided the money for training is forthcoming. But to become a 'good' barrister, a 'good' doctor, or a 'good' veterinary surgeon is another matter. Naturally, the best men survive. And the really good men are few!"

CLINICAL AND CASE REPORTS.

Teat Sinus Injections for the Prevention of Mastitis.

By F. T. Harvey, F.R.C.V.S., St. Columb.

The importance of the teat canal as a portal of entry for pathogenic organisms approaching the gland parenchyma of the cow's udder needs, in the present communication, no emphasis. The defence mechanism of the teat was dealt with in a paper on "Bovine Mastitis" at the Bath "National," 1922, and also "The Sphincter," more particularly, at Torquay in 1927. It is sufficient to say that in spite of the efficiency of the defence mechanism virulent bacteria do succeed in getting through the teat canal and cause mischief in the udder, and further, that the saprophytic and normally harmless flora commonly found in the teat sinus may on occasion become pathogenic. It is to guard against either of these catastrophes, that a hidden store of antiseptic, always available within the teat canal itself, is indicated during the dry or non-lactating period of the udder, or in other words the provision of a second line of defence, and more especially when mastitis tends to become enzootic.

The injection of a bismuth paste into the teat canal was first used in the treatment of morbid conditions of the teat membrane, but it was soon seen to have possibilities in the prevention of mastitis proper. Any substance so used must be non-irritating, and free of all risk of injuring normal tissues, and be inhibitory of bacterial growth. It should by its mechanical and curative action prevent adhesions in the teat canal in those cases having a tendency to a stenosed condition, or in the formation of membranes, etc.

Colonel Brittlebank has reported favourably on the application of a little tar to the teats as a preventive of mastitis, and it is of course useful in lessening fly attack, but the method requires fortifying at a deeper level. Similarly with collodion, which has recently acquired a certain vogue. A short time since I saw a very valuable cow whose teats had been covered with collodion at the end of her lactation. At calving there was mastitis in all the quarters. The cow was not seriously ill, but she was of no further use in the dairy.

The application of collodion without sterilisation or a thorough cleansing leaves much to be desired and all external applications require repetition. Fly attack is intermittent, but bacterial aggression is constant and requires a continuous guard.

The prevention of mastitis is a serious problem in some seasons, both in fattening and in dairy cows during the dry period, and any method which will lessen its incidence is worthy of trial since it seems that mastitis must be attacked on a wide front, for biological products do not at present fill the bill.

The Injection.

This was rather difficult at first with an ordinary syringe on account of the pressure necessary, but Mr. John Brown, of Invergordon, to whom I explained the method some three years ago, succeeded in getting the Surgical Appliance Co., at Aberdeen to turn out a syringe having a screw piston rod and a semi-flexible tube capable of withstanding a high pressure. It is quite useful, but more flexibility in the tube would be an improvement.

The material injected is a bismuth paraffin paste with iodoform or flavine and some other antiseptic or disinfectant added as thought desirable. With liquid paraffin alone any added salts soon settle down and collect over the teat sphincter and the paraffin floats on the top. The addition of a certain proportion of soft paraffin is desirable, as a permanent and uniform mixture may thus be obtained. Inject according to the size of the teat canal and sinus and knead the parts gently. There should be no tension. Iodoform and bismuth remain for long periods when introduced in this way and so form a sort of barrage through which bacteria are unable to pass. This note is intended as supplementary to the demonstration given by Mr. John Brown at Ayr.

A Note on Purulent Otitis in the Pig.

By H. LORENZEN, Veterinary Surgeon, Ringsted, Denmark.

Following upon the very interesting paper on veterinary otology, by Mr. Henry Gray, recently published in the *Record*, I should like to be allowed to give you a few remarks on purulent otitis in the pig. The treatment is of little importance. On the other hand, it often proves to be valuable to the practitioner who has to do with the meat inspection and section of pigs to have some knowledge of the disease and especially of an easy method for diagnosing it. During half the year of 1926 I had occasion to study eighteen cases of purulent inflammation of the middle and inner ear in pigs and subsequently I have often been able to point out the disease. This is especially due to the method of examining. In the majority of cases otitis was seen together with infectious rhinitis ; in a large minority, however, no inflammation of the mucous membrane of the nasal cavities could be detected. By far the largest number of cases proved to be due to *Bacillus pyogenes*. In one case I found streptococci in pure cultivation.

As a rule, otitis seems to occur in small—even if not young—unthrifty pigs, but it is not uncommon to find it as the sole disease in large fat animals. In these cases there is no indication for any investigation of the auricular region if you have not seen the animal before killing. In cases in which there is a suspicion of some disease of the brain or the middle and inner ear you must have the carcase as well as the head of the pig cut through in all its length and placed upon a table. This is convenient in all the cases where you need an especially careful examination. After having inspected the brain you must find the pars petrosa. By putting, for example, the point of a knife below the pars petrosa it is easy—especially in young pigs—to loosen and lift it and now you can look down into the cavum tympani. If there is no suppuration you will find the tympanic membrane smooth as a mirror. By this method it is just the business of a moment to find out if there is suppuration in the middle ear. But as far as I know it can only be used in the pig. Thus I did not succeed in loosening the pars petrosa in an eight-days'-old calf in which the tympanic cavity proved to be filled with solid greenish pus. Here it was necessary to saw through the bulla ossea.

When you have noted abnormal movements of the living animal it is always unsatisfying not to be able to point out the reason. (Besides otitis you may think of abscesses of the brain, bleedings, dilatation of ventricles of the brain, as well as blindness, these conditions being very common in pigs). You may say that the technique is a rather special one. Nevertheless, if you practise it, it results in the improvement of your sections and meat inspection work.

Parliamentary Notes.

Animals Slaughtered under the Tuberculosis Order. Mr. Buxton informed Mr. Lowther that animals slaughtered during 1928 under the Tuberculosis Order of 1925 numbered 92 in Northumberland, 210 in Durham, 152 in Cumberland, and 320 in the North Riding. The carcases of animals slaughtered, for which compensation was paid to the owner, became the property of the local authority, and the Order of 1925 (No. 2) provided that no parts of such carcases should be removed for consumption without the written permission of the medical officer of health or other competent officer of the sanitary authority. Mr. Buxton was satisfied that proper precautions existed.

Slaughter of Animals. In the House of Commons recently the following was among the Bills presented :—"SLAUGHTER OF ANIMALS : to provide for the humane slaughter of animals ; and for purposes connected therewith," presented by Lieut.-Colonel Moore ; supported by Countess of Iveagh, Major Sir Archibald Sinclair, Mr. Westwood, Miss Lloyd George, Sir William Davison, and Sir Robert Gower ; to be read a second time upon Friday, February 7th.

Experiments on Animals. Replying to Mr. Freeman, Mr. Clynes said that the increase of experiments on living animals without anæsthetics during 1928 was largely due to the need for standardising drugs for use in medical practice, of diagnosing the diseases of patients under treatment, and of testing the purity of milk and other foods. The report of 1912 of the Royal Commission on Vivisection made full investigation of the whole question of experiments on animals, and he thought no further inquiry was necessary.

Milk and Dairies Order. Proposing the extension of the Milk and Dairies Order, 1926, to the housing of calves and young cattle in order to prevent the spread of tuberculosis, Mr. Lowther was informed by Miss Lawrence, Parliamentary Secretary to the Ministry of Health, that although the Minister agreed as to the importance of the proper housing of calves and young cattle it seemed to him that the safeguarding of the health of such animals was too remote from the objects of the Milk and Dairies Order to justify him in extending the provisions of that Order as suggested.

Classification of Graded Milk. Miss Lawrence told Mr. Kedward, on November 18th, that the Minister of Health was aware of the criticism against the present classification of graded milk and the lack of agreement among producers. Legislation would be necessary before any alterations could be made, and time would not permit of a bill this session.

Foot-and-Mouth Disease Research Committee. Mr. Buxton informed Rear-Admiral Beamish that the Foot-and-Mouth Disease Research Committee, set up in 1924, had already published three reports. The investigations which had been carried on during the past year at five laboratories had been on the lines described in the Committee's third report. Valuable additions had been made to the knowledge already acquired, and it was hoped that a further report on the work of the Committee might be

published next year. It was still the policy of the Government to slaughter when disease broke out.

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Sheep Scab. Mr. G. Dagger asked the Minister of Agriculture whether he proposed to introduce legislation that would provide for placing the onus of the eradication of sheep scab upon the owner, with consequent penalties.

Mr. Noel Buxton (Minister of Agriculture): An order was made in 1923 which placed upon sheep owners the onus of eradicating sheep scab from their flocks. It not only failed to achieve its purpose in reducing the prevalence of scab, but owners were deterred from reporting the existence of scab in their flocks by fear of prosecution. The Order was therefore withdrawn in May, 1926.

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Disease in Pigs. Mr. Granville asked the Minister of Agriculture if, in view of the mistakes and delays of the present system, he would consider improving the machinery of inspection and certification of disease in pigs.

Mr. Buxton: I presume that the hon. Member refers particularly to swine fever. As this disease is caused by a virus which cannot be cultured, no biological tests are available with which to make a quick diagnosis. Therefore, until clinical symptoms and *post-mortem* lesions are well developed it is at present often impossible to make a diagnosis. For this reason the Veterinary Inspectors find it necessary to examine suspected pigs more than once in from 15-20 per cent. of the outbreaks. Improved methods, therefore, depend on further research, which it is the Government's intention actively to encourage.

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Animal Diseases (Inquiry). Mr. Granville asked the Minister of Agriculture if he would initiate a comprehensive inquiry into animal diseases, particularly with reference to swine fever and erysipelas.

Mr. Buxton: Provision for the comprehensive study of animal diseases in this country is already made at three research institutes devoted to research in animal pathology. These are the Institute of Animal Pathology in the University of Cambridge, and the Institute of Animal Pathology attached to the Royal Veterinary College, Camden Town, both of which are supported by annual grants: the third institute is maintained by the Ministry at Weybridge. Attention is already given to swine diseases, and it is the intention of the Ministry to strengthen the staff at Weybridge and to give increased attention to these diseases.

. . . . . .

Epizootic Disease of Animals. Mr. Buxton, in a reply on November 18th, said that epizootic abortion differed from scheduled diseases of animals in that it might persist in a herd from three to seven years, or even longer. If it were made notifiable, and the movement of animals was controlled, stock farming would be difficult and the cost of administering the Order enormous. Research work on this subject was being conducted all over the world, and the Ministry encouraged research workers in this country to concentrate on a cheap means of immunisation.

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Vacancies for Colonial Veterinary Officers. Mr. Ormsby-Gore asked the Under-Secretary of State for the Colonies if he would state how many unfilled vacancies now existed for veterinary officers and veterinary research officers in the Colonies, Protectorates and Mandated Territories. Mr. Lunn replied: Apart from the consequential vacancies which will be caused by promotions now under consideration there exists at the present time one vacancy for a veterinary officer.

Foot-and-Mouth Disease in Scotland.

The existence of foot-and-mouth disease was confirmed last Saturday in a number of pigs in the abattoirs at Glasgow markets, and the usual movement prohibition order is in force.

The approved landing place for Canadian, Irish, and Isle of Man animals at Merklands, Glasgow, is included in the area, and animals landed there will not be allowed to be moved from the landing place to destinations outside the infected area.

ABSTRACTS.

[**Experimental Studies with B.C.G. Vaccine.** King (M. J.). *Cornell Vet.* 1929. Ap. Vol. 19, No. 2, pp. 96—104.]

After briefly reviewing the findings of other investigators in their experiments with B.C.G., the author describes his own test of the vaccine. The vaccine has been administered orally and by subcutaneous injection, and in each case the administration has been followed in a proportion of cases by infection with virulent bacilli. The infective doses have been given either by subcutaneous or by intravenous inoculation. A few additional animals had the infective dose fed to them.

Seven calves each received five feedings of 50 mg. of B.C.G. Five of these were killed at 51 weeks and no lesions could be found; one was killed at 5 weeks and was free from lesions, and the remaining one was surviving at 2½ years and failed to react to tuberculin.

Eight further calves were similarly treated, but after intervals ranging from 16 to 30 weeks they were inoculated with doses of bovine culture ranging from 0·1 mg. to 10 mg. One calf was fed with 20 mg. at 22 weeks. A control (unvaccinated) was used for each animal. Only two of those tested by inoculation failed to develop any lesions, while all the controls were infected. Neither the calf fed with the bovine culture nor its control became infected. Of 29 calves injected with 50 mg. of B.C.G., 27 had developed the power to react to tuberculin three months later. Nine months after vaccination only two were reactors, but a year after vaccination 6 were again giving marked tuberculin reactions. The author is unable to furnish an explanation of this, but suggests that either the B.C.G. had become virulent or that the animals had become infected naturally.

In a group of 11 calves also inoculated with 50 mg. of B.C.G., three were reactors at 5 and 8 months after vaccination.

Both these groups have been re-vaccinated. One calf which had been vaccinated gave a positive tuberculin test at 10 weeks, a doubtful one at 42 weeks, and negatives at 72 and 90 weeks. The bull was put on a farm to be used for breeding and thirty weeks later it and several of the cows in the herd were positive to tuberculin. A month later the bull was killed and tubercles were found in the bronchial and mediastinal glands and in the lungs. Unfortunately, material was not available to the author for obtaining cultures and ascertaining the virulence of the organisms.

The author draws special attention to the fact that while in many cases lesions containing acid-fast bacilli have been produced in guinea-pigs inoculated with B.C.G., in no case has it been possible to infect further animals by inoculation with emulsions of these lesions. Further special reference is made to one guinea-pig which died of secondary infection ten weeks after inoculation with B.C.G. In this animal there was extensive tuberculosis. It is suggested that this was a case of special susceptibility.

Sixteen calves were vaccinated subcutaneously, the vaccination being followed by test inoculation either by the subcutaneous or by the intravenous path.

Doses of 10 mg. and 5 mg. subcutaneously produced "cold abscesses," and doses of 1 mg. intravenously produced some tuberculosis of the glands (bronchial and mediastinal). Doses of 0·1 mg. and less injected subcutaneously, failed to infect.

In a few experiments in which calves vaccinated subcutaneously and controls were given the test dose orally none became infected. The controls and vaccinated both resisted 300 mg. by this path. A. L. S.

Two Cases of Spinal Anæsthesia in Cattle, using Tutocaine. Oscar Sandström. *Svensk Veterinar Tidskrift*, No. II., 1929.]

The author describes two cases of spinal anæsthesia in cattle by the Benesch method. Two 5 c.c. ampoules of tutocaine plus 0·005 per cent adrenalin were used epidurally in each case. Tutocaine is Paraaminobenzoldimethylaminomethylbutanol. The first case described was one of everted uterus and the animal made an uneventful recovery. In the second instance the injection was made to perform embryotomy on a difficult posterior presentation. The subject was unable to rise and was slaughtered on the fifth day after parturition. The author is satisfied that the disability was not the result of the injection and, considering the details of the case as described in the original, the abstractor is inclined to agree with this verdict.

A final reference is made to the experience of Moller with this method. Moller used it in five separate instances, but in two cases satisfactory anæsthesia was not induced even after repeated injections. From information gained from regional dissection Moller emphasises the importance of directing the needle precisely in the mid-plane. He therefore seems to infer that his failures were due to failure to observe this rule. Moller used Tutocaine in tabloid form. G. B. B.

A Contribution to the Technique of Blood Transfusion in the Foal. Karl Fagerberg. *Svensk Veterinar Tidskrift*, No. II., 1929.]

In 1916 Forssell introduced transfusion of blood from the dam to the foal as a specific treatment for joint-ill. Following a recent interview of this method (*Svensk Veterin.*, 10, 1929) Fagerberg describes his experiences using the Median Vein instead of the Jugular as the site for injection. He claims that the Jugular in the foal is difficult to enter and that any unexpected movement on the part of the animal may displace the needle, and therefore prefers the median site. To insert the needle the fore-limb of the opposite side is carried forward. From the same side the operator stoops and compresses the vein of the upright limb and so inserts the needle. Transfusion is then carried out. G. B. B.

Warble Fly Damage. Leicestershire Chamber of Agriculture recently passed a resolution in favour of compulsory dressings for the warble fly. Mr. Geo. W. Cook, who has a practical acquaintance with the leather trade, said the loss of milk and the general unthriftiness of cattle brought the farmers' losses through the fly to an enormous sum.

RESEARCH REPORT.

The Annual Report of the National Institute for Research in Dairying, 1928.

This report makes very interesting and instructive reading.

A large amount of work of a most varied character has been carried out, which is not surprising when one considers that the functions of a dairy research institute include all questions relating to the production, handling and distribution of milk and the manufacture of dairy products.

It is to be regretted that this valuable work is hampered by lack of funds. For some time the Institute has wished to study the physiology of milk secretion but has been unable to do so as no funds were available for a physiological section.

The Farm.

The dairy herd consists of dairy Shorthorns, which are being graded up to pedigree standard, and Guernseys, all of which have completed one or more lactation periods and have qualified for entry into the English Guernsey Cattle Society's advanced register. The average milk yield of the herd has gradually increased until, during this year, it reached 8,610 lbs. per cow, in spite of the experimental work which is carried out.

During the year this experimental work included:—

The nitrogenous manuring of pasture land, coupled with intensive grazing. This experiment has been in progress since 1925, and is to be continued. During the experiment both botanical and chemical analyses of the herbage were made and the number of cow-grazing days, combined with the milk yield of the cows, compared with control pastures. The results show an advantage in the experimental plots.

The hygienic efficiency of milking machines.—This work was carried out in conjunction with the Bacteriological Department.

The study of Butter Fat Records.—Exhaustive work on this subject has been done and shows that the tests as carried out by the County Milk Recorders are satisfactory, having an error of less than 0.2 per cent.

Chemical Department.

As stated in the report, the study of the chemical problems of the dairy industry cover a wide field, including:—the soil, foodstuffs, milk and milk products, dried milk, condensed milk, cream, butter, butter milk, cheese, whey and separated milk, and even the chemistry of the cow's blood has to be included. Perhaps the most important element in all this work is calcium. This element is essential for the proper growth of certain food plants, is very essential to the cow and its presence in milk in proper quantities influences the production of cheese.

Work in connection with calcium has been carried out on farms on which milk fever was prevalent, the soil and herbage have been analysed, also the blood of pregnant and freshly-calved cows.

It has been shown that by feeding cod liver oil to lactating cows, the amount of calcium in the milk is increased, which may have some bearing on its increased antirachitic properties, which have also been demonstrated.

It has been shown that feeding cod liver oil in doses of four ounces or more to lactating cows causes a very marked depression in the percentage of fat in their milk.

The effect of heat upon the calcium content of milk has also been studied.

A discovery of great interest to the butter industry is a test for the incipient rancidity of fat.

A large number of feeding experiments in connection with vitamins A and D have been carried out and it has been found that young pigs from weaning to porker age showed a considerable increase in growth when half a pint of fresh milk per pig per day was added to their diet.

The Chemical Department was responsible for the work on the blood sugar of the cow in milk fever and under normal conditions, and showed that in the normal cow this varied between fairly wide limits and that a hypoglycæmia was not the cause of milk fever.

An important piece of work has been undertaken with regard to whey. It has been found possible to dry whey and separated milk in equal proportions and the resultant product, resembling dried milk, has been found useful in bread making.

BACTERIOLOGICAL DEPARTMENT.

This department has been studying for two years the hygienic quality of milk obtained by the use of milking machines, and has shown that milk of the highest hygienic quality can thus be obtained, but that during the summer months the units must be sterilised by steam—no amount of washing can take the place of steam sterilisation.

During the whole of this experiment no case of udder trouble which could be attributed to the use of a machine was encountered.

It has been shown that some varieties of cheese do not ripen satisfactorily when made from milk of a low bacterial count. Other varieties will do so if modified starters are used.

Considerable work on cheese ripening is being undertaken.

A great deal of advisory work is carried out to assist dairymen and others in the milk industry. This is shown by the fact that during the year 2,400 milk samples were tested.

The results of milk samples tested in connection with eight clean milk competitions are given and show that a very high percentage reach Certified and Grade A standard.

Thus, in the Berkshire Competition 85 per cent. reached Certified standard and only 6.2 per cent. failed to reach Grade A standard, which result was far ahead of any other competition and shows what a great influence an Institute of this kind can exert in a district.

THE DAIRY.

Considerable quantities of experimental cheese and butter have been made in co-operation with other departments, during investigations into such matters as Cheddar cheese made from clean and commercial milk, red spot, the effect of cod liver oil feeding and the effect of metals on butter.

A large number and variety of dairy utensils have also been tried and tested.

The Institute has been carrying out, on behalf of the Empire Marketing Board, the examination of samples

(*Continued at foot of next column.*)

MUNICIPAL REPORTS.

Annual Report of Chief Veterinary Inspector to the County Council of the West Riding of Yorkshire, 1928.

The Office of Chief Veterinary Inspector to the West Riding of Yorkshire was created in 1927, and the second annual report of the Chief Veterinary Inspector deals with the organisation of the Department which has been built up during the past two years. In 1927, authority was given for the appointment of four whole-time assistants. It was found impossible with this staff to accomplish a regular routine dairy inspection in the County and at the same time to overtake the duties falling to be performed under the Diseases of Animals Acts. Four additional assistant Veterinary Inspectors were, therefore, appointed during the course of 1928. A panel of twenty-two part-time Veterinary Inspectors has also been approved, the part-time Officers being available for service under the Diseases of Animals Acts in emergencies and during periods of congestion.

Looking through the statistics given in the report, there appears to be ample justification for the view expressed that—"In the short time that regular inspections have been carried out the results have shown that their institution was well justified, not only from the number of dangerous cows that have been removed from the herds, but also from the distinct improvement shown in the methods of milk production in many areas and the general interest these inspections produce amongst all concerned. Another pleasing aspect is that several local sanitary authorities have asked that the veterinary inspections should be carried out more frequently, showing how much they appreciate their utility. As far as possible arrangements have been made to meet their wishes."

Ninety-three cases of suspected anthrax were investigated during the year, eleven of which, involving 14 animals, were found to be positive. Thirteen cases of sheep scab occurred as against 26 in the previous year. These included two exceptionally bad cases in which the owners had hidden sheep scab for many months. The report deals lucidly with the trouble and expense involved in tracing the in-contact sheep, and shows that the failure to report ultimately entailed the application of double-dipping restrictions to approximately 8,500 sheep.

"Both cases illustrate the reluctance shown by farmers to 'give away' a neighbour—either due to a false interpretation of 'esprit de corps' or to fear. The neighbours were all highly incensed against the culprits and when the disease was detected gave every assistance in tracing sheep, but it is to be hoped that the trouble and expense so many were put to, may show them that they acted under a mistaken sense of honour."

One outbreak of foot-and-mouth disease occurred in the County as compared with five the previous year, but large

(*Continued from previous column.*)

of cheese and butter for such complaints as black and blue spot, bad flavours, etc., and it is interesting to note that a fishy flavour in butter can be induced by the presence of small quantities of metallic copper.

tracts of the County were included in infected areas and subjected to restriction of movement of animals on three occasions in consequence of outbreaks of foot-and-mouth disease in the districts of adjoining local authorities. A suspected outbreak of foot-and-mouth disease in Ireland in July necessitated the tracing of Irish cattle to 122 premises where they were placed under restrictions and maintained under observation as required by the Foot-and-Mouth Disease Order, 1928.

Under the Tuberculosis Order, disease was reported or otherwise suspected on 981 premises. Investigation resulted in the slaughter of 809 animals under the Tuberculosis Order. The animals were classified as follows:—

A.	Cows with tuberculosis of udder ...	226
B.	Cows giving tuberculous milk and showing lesions of tuberculosis ...	2
C.	Cattle with tuberculous emaciation ...	291
D.	Cattle affected but not as in A, B or C	285
E.	Cattle not affected...	5

In surveying the result of the year's work, the report states that "the most satisfactory feature is the high percentage of cows detected and slaughtered with udder tuberculosis. This figure of 28.2 per cent. of all animals slaughtered under the Order, as against 16.2 per cent. the previous year, is largely due to the routine inspection of cows, for but few were reported by their owners. The returns on the working of the Tuberculosis Order issued by the Ministry of Agriculture over the United Kingdom for the year 1927 (the last available figures) show only 11.9 per cent. of the total killed, including cows whose milk was proved to be tuberculous. In addition to the 228 cows with udder tuberculosis or giving tuberculous milk, nine udder cases were detected in boroughs during inspection under the Milk and Dairies Order and reported to the Borough Authority concerned, four were found in cows on hospital farms and duly slaughtered and three were killed by their owners at their own risk under special licence. This gives a total of 244 cows slaughtered whose milk was highly dangerous and if each cow could infect, say, 10 children when its milk was mixed on the farm (a moderate estimate), the benefit to the milk consuming public is well apparent. It must be admitted, however, that many were only detected when they had already been milking for some time, and it is impossible to say what damage they may have done previously."

"It must not be assumed that the number of cattle dealt with under this Order is a true statement of the extent of the disease, for there is still ample evidence to show that many badly tuberculous cattle are sent directly to the knacker, or otherwise disposed of by farmers."

In that part of the report which deals with work under the Milk and Dairies Acts, an account is given of 44 investigations arising out of complaints from consuming local authorities of having found tubercle bacilli in milk consigned to them from the County. "In 26 instances the offending cows were detected on the first visit and confirmed as positive from the examination of an individual sample, while in 5 others a group sample proved positive, and the culprit was only found by taking separate samples from every cow whose milk was included in the group."

"These cows were all slaughtered and 29 were found to have their udders affected, while two, although diseased, did not show tuberculosis of the udder substance itself. Out of the 44 complaints received, 31 tuberculous cows were found on 26 premises, while in 18 instances no such cow could be found after examining samples of milk from all cows in milk on each farm."

"It is often extremely difficult to account for cases where no cows excreting tubercle bacilli in the milk can be found. It is sometimes explainable by cows having been sold off farms or going dry, or, possibly, by extra milk having been purchased by farmers to make up a deficiency. In most cases where the investigations were negative a further mixed sample was taken by the complaining authority, and was found to be negative, with the exception of one from a farm where ultimately a diseased cow was discovered."

In terms of the Milk and Dairies Orders 8949 farms were visited and 100,654 cattle examined, an average of 11.25 dairy cattle per farm, of which, on an average, 10.6 were actually in milk. "These average figures are somewhat less than those obtained last year for a part of the County area, and even yet it is not possible definitely to say what the number in the whole of the Riding actually is."

Seven hundred and fifty-one samples of milk were taken during the course of these inspections, of which 651 were individual and 100 group samples. At the end of the year the examination of 704 samples had been completed, showing that 145 contained tubercle bacilli. All microscopical examinations are made by the Veterinary Officers, each of whom is furnished with the necessary equipment, and it is only in those cases in which a biological test is necessary that the suspected material is dealt with by the County Bacteriological Laboratory.

The report is an excellent summary of a large volume of first-class work. It is a concrete illustration of the results which can be achieved by a well-organised County veterinary service in the detection and removal of animals dangerous to human health, which, but for the service, would remain undetected and would continue for indefinite periods to distribute the seeds of tuberculous infection to consumers of milk. The progress made and the results achieved during the very short period which the Veterinary Department of the West Riding has been in existence reflect great credit on Mr. Rabagliati and his Staff.

Mr. A. H. McDougall.

The Glasgow Evening News, in a recent issue, pays a warm tribute to Mr. Allan H. McDougall, M.R.C.V.S., who is leaving Glasgow for London. The *News* article concludes:—

"It is because his knowledge is so wide that he has now been appointed Veterinary Surgeon to the famous Bloodstock Agency.

"The unfortunate element in his appointment is that it involves his return to London, for the headquarters of the Agency are at Enfield.

"It will be a queer Glasgow for animal lovers when, after three generations, there will be no McDougall practising in the city."

Annual Report of the Veterinary Officer, Newcastle-on-Tyne, 1928.

Mr. Thos. Parker, F.R.C.V.S., presents some interesting particulars in his Report for 1928, *viz.* :—

Diseases of Animals Acts 1894 *to* 1927. There occurred three outbreaks of swine fever under the Tuberculosis Order of 1925: four cases were dealt with, *viz.*, three in which the lesions were found in the udders and one in a situation other than the udder. When the total amount paid as compensation to owners had been made over there remained a balance of £16 19s. 11d. in favour of the Corporation.

No other notifiable diseases occurred during the year.

Cattle Market. Number of animals on sale :—

Cattle	33,531
Calves	1,585
Sheep	201,825
*Pigs	2,644
Dairy Cows	395
Total	239,980

* In addition 27,235 pigs were sold within licensed lairs.

Milk and Dairies Order, 1926. There are within the City 19 cowkeepers, 31 cowsheds and 308 cows. Ninety-seven visits were made to the premises and 8 cows found diseased, of which, as previously stated, 4 were tuberculous.

Imported Foodstuffs. Visits to the number of 447 were made to wharves, etc., where 1,515 packages were examined, and particulars are given as to caseous lymphadenitis in imported sheep carcasses from South America. The percentage found affected varied from 3·8 to 8·7. A total of 112 carcasses were destroyed for this disease. In some of the carcasses lymph glands had been excised at the place of slaughter, but lesions of the disease were present in the glands which remained *in situ*. In some of the carcasses the lymph glands had been removed and no lesions were found in the remaining glands. All carcasses containing lesions or from which the glands had been removed were destroyed.

Public Abattoirs, Markets, etc. A suitable site is being looked for on which to build modern premises. There are still 102 licensed slaughterhouses in Newcastle. It is impossible to conduct meat inspection satisfactorily in so many premises situated over a wide area.

Rats and Mice (Destruction) Act, 1919. Eighty-eight visits were made, 138 premises dealt with and rats found infesting 77. Those were eradicated.

Meat Inspection.

Cattle, Calves and Pigs Slaughtered within the City.		Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		*Number of Animals found Tuberculous.	
		Whole Carcases Condemned.	Parts or Organs Condemned.	Whole Carcases Condemned.	† Parts or Organs Condemned.
Year 1928.		Year 1928.			
Cows	842	66	69	61	61
Heifers	10,621	28	52	27	33
Bulls	393	2	2	2	1
Bullocks	5,657	19	38	19	32
Totals	17,513	115	161	109	127
Calves	4,299	26	4	1	—
Pigs	46,964	101	510	51	231

* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

† Sex not known, 2.

In addition, 1,747 horses were killed.

In reference to tuberculosis, it is interesting to observe that the number of carcasses destroyed as unfit for human food in 1910 was 110 and the percentage 94·82, while in 1928 the figures were 109 and the percentage 94·78—evidently no improvement during 18 years.

The total weight of meat and other foodstuffs destroyed was :—

	tons.	cwts.	qrs.	lbs.
Beef, mutton, veal, pork	47	8	1	17
Offal, provisions, etc. ...	29	7	1	6
Total	76	15	2	23

Humane Slaughtering.

An Appendix giving some experiments by various methods of stunning, with special reference to the condition known as "Splashing," completes the Report.

The experiments evidently followed the lines of those conducted by the City of London Officers and are too detailed to give in connection with an Annual Report, but Mr. Parker's summary is as follows :—

Conclusions.

1. The most humane method of slaughtering is that which renders the animal unconscious immediately.

2. The use of suitable mechanically-operated instruments is preferable to the pole axe or hammer for the stunning of cattle and pigs.

3. Killing by injury of the medulla (pithing) which paralyses only, before bleeding the animal, instead of stunning by direct concussion of the cerebrum, is an objectionable practice and should be prohibited.

4. The stunning of cattle and pigs with the ordinary felling hammer, mallet or pole axe is not on a comparable basis with the ordinary or traditional method of sheep killing.

5. So far as efficient bleeding and appearance of the carcasses are concerned, it makes no difference whether the animal is stunned with a mechanically-operated mallet, felling hammer, or pole axe.

6. When animals are properly bled immediately after stunning the carcasses are invariably found in perfect condition.

7. Undue delay in proceeding to bleed sheep or pigs after stunning may result in the carcasses being splashed, congested, or both.

Annual Report of the Medical Officer of Health, Salford (Veterinary Officer's Section), 1928.

The Annual Report of the Medical Officer of Health for the city of Salford for the year 1928, has just been issued and section 5 of this report comprises that of the Veterinary Inspector's Department.

From the report it is evident that the Veterinary Inspector deals with the inspection of live-stock and markets; work under the Diseases of Animals Acts; dairies within Salford area; the taking of samples of milk from the city dairies and from milk which is sent into the city, as well as the inspection of slaughterhouses, meat and food-stuffs generally.

The Report states that there was no outbreak of foot-and-mouth disease in Salford during the year, but that the cattle market in the area was closed during January and again in April owing to outbreaks of foot-and-mouth disease in adjoining districts which included Salford Markets in the Restricted Areas. In the cattle market there were exposed for sale during the year, 47,503 cattle and 320,395 sheep. A comparison of the figures for the previous year shows a large decrease; this is said to be due to the closing of the market during the foot-and-mouth disease periods and to the quiet times following this closing, owing to the disorganisation caused in the live-stock trade.

It is further recorded, in connection with the other scheduled diseases dealt with during the year, that there were: —2 outbreaks of swine fever; 13 suspected (not confirmed) cases of anthrax; and 3 cases of tuberculosis.

Tuberculous Milk.

The report shows that there are six farms within the city from which milk is produced for sale: most of the milk comes from Lancashire and Cheshire. The part of the report on tuberculous milk is very interesting. Of the 445 samples from farm supplies 8·3 per cent. were found to contain living tubercle bacilli. The report states that "The figure remains fairly constant, and may be taken as giving a fair idea of the incidence of tuberculosis in the milk in this part of the country," yet in a report recently issued by the Medical Officer of Health for the city of Manchester, which is in the same district as Salford, the percentage of tuberculous milk is much higher, being 17·57 per cent. for the whole of their supplies.

If we take the two individual counties of Cheshire and Lancashire which are mentioned in the report as being the countries from which Salford draws the bulk of its milk, we find the percentage of tuberculous milk is given as follows:—

Cheshire, 10·4 per cent. and Lancashire, 5·1 per cent., making an average of 7·75 per cent., whereas the Manchester supply from these two counties gives the percentage of tuberculous milk to be:—Cheshire, 18·10 per cent. and Lancashire, 10 per cent., making an average of 14·5 per cent.

The remaining sections of the Report set out the work carried out in the inspection of slaughterhouses, meat and other foods, and of retail meat shops.

There are six private slaughterhouses and one public slaughterhouse, and during the year the carcasses of 830 cattle, 8.029 sheep, 9 calves, 16,979 pigs were inspected.

In connection with the Inspection of Meat, etc., there were 1,304 cases of surrender consisting of:—

	tons.	cwts.	qrs.
Beef	7	8	2
Mutton		1	5
Pork	14	14	0

223 tins of Foodstuff.

Of the total weight of meat seized, 55.3 per cent. was condemned for tuberculosis.

The retail meat shops and food preparation premises have been regularly visited and have generally been found to be clean and conducted in a satisfactory manner. There are no stalls in the city selling meat.

The list of offensive trades shows 12 registered traders.

Farmers' Views on Foot-and-Mouth Disease Policy.

"Impassioned journalistic indictments of the Ministry of Agriculture for pursuing its policy of immediately slaughtering animals with foot-and-mouth disease find no response among farmers," says *Truth*. "At a recent meeting of the Axminster branch of the National Farmers' Union some figures were given which vindicate the 'slaughter policy' up to the hilt. It was first operative in 1896, and it was estimated then that it would cost £200,000 a year but from 1896-1922 the average yearly expenditure did not exceed £10,000. Then came the bad years, 1922, 1923, 1924, the worst ever known in this country. But here again the policy was more than justified, for over a five-year period which includes the three bad years the total number of outbreaks in this country was only 4,973. Comparative figures for the same period in Germany were 317,783, in Denmark 159,279, in Holland 192,050, and in France 101,852. None of these countries adopts the slaughter policy.

"Since 1896, according to official figures, we have spent in all about £5,000,000 in compensation for animals slaughtered. Recently in one year it cost France the same amount to 'control' the disease. In the face of these figures it is not surprising that all farmers are almost unanimously in favour of the present methods of dealing with the scourge."

DIVISIONAL REPORTS.

South Eastern Division, N.V.M.A.

Important Subjects Discussed at Maidstone Meeting.

A varied programme of subjects of interest to every practitioner proved a big attraction on the occasion of the Autumn Meeting of the South Eastern Division, N.V.M.A., which was held at the Royal Star Hotel, Maidstone, on Wednesday, October 30th, 1929.

The President (Mr. Henry Taylor) occupied the Chair and there were also present Mr. F. C. Crowhurst, Major T. Dalling, Mr. J. B. Dier, Major G. W. Dunkin, Messrs. E. Ebbetts, H. P. Hogben, T. F. Hogben, F. Marks, C. W. Perrin, Major L. P. Pugh, Mr. C. Roberts, Major C. Rose, Messrs. A. Spicer, A. Whicher and W. S. Gordon (Hon. Secretary) with Captain J. H. Mason (a visitor).

The minutes of the previous meeting, which had been published in the *Record*, were taken as read and were signed as correct.

Correspondence.

(1) From Mr. E. P. Barrett, Captain J. Bell, Mr. J. G. Cattell, Captain H. S. Dunn, Captain W. D. Halfhead, Mr. H. S. Head, Miss E. G. Knight, Mr. G. P. Male, Mr. E. Morgan and Captain E. B. Reynolds, expressing regret at their inability to attend the meeting.

(2) From the Hon. Secretary of the Scottish Branch, N.V.M.A., enclosing a copy of the West of Scotland Division Scheme for the Eradication of Bovine Tuberculosis, and saying that any suggestions on the subject that the South Eastern Division cared to make would be gratefully received and would serve to guide the Scottish Branch in further action.

Consideration of this matter was deferred, as it appeared later on the agenda of the meeting.

(3) From the Secretary of the N.V.M.A., forwarding, by instruction of the Council, a copy of a report of an interview which recently took place between a deputation from the Royal Agricultural Society and the National Sheep Breeders' Association and the Minister of Agriculture in order to discuss what could be done to lessen and, if possible, stamp out, sheep scab in Great Britain. The letter stated that the Council of the Royal Agricultural Society would welcome suggestions from Divisions in the matter, and that any such suggestions sent to the N.V.M.A. Office would be forwarded.

The Hon. Secretary informed the meeting that this communication, and the accompanying report, had been discussed by the Council of the Division that day, and one suggestion the Council had made was that all markets and stock sales should be subject to inspection by veterinary surgeons, and also that local advertisement should be given to the necessity for the eradication of the disease.

On the proposition of Mr. Hogben, seconded by Mr. Dier, it was agreed to forward the following resolution :— "That, in the opinion of the South Eastern Veterinary Medical Association, all markets and public stock sales throughout the country should be inspected by veterinary surgeons; that it would be an advantage to have farm sales where sheep are exposed for sale inspected, and that, through the local press, publicity should be given to the existence of the disease in badly-infected areas."

(4) From the Principal of the South-Eastern Agricultural College, Wye, Kent, thanking the Division for the support accorded the application which the Governors of Wye College had made to the Ministry of Agriculture for the appointment of a Veterinary Officer on the College Staff, and stating that the College hoped to be in a position to appoint a Veterinary Officer at the beginning of November.

(5) From Miss E. Gertrude Knight, of Dorking, enquiring as to the basis of professional charges in that district. It was agreed to invite Miss Knight to communicate in this matter with Mr. Spicer, he having undertaken to render her what assistance he could.

Nominations for Membership. Miss E. G. Knight (Dorking), Mr. Cornish-Bowden and Mr. J. H. Mason (Beckenham) were nominated as members of the Division.

The Present System of Grading Milk.

The President now called upon the Hon. Secretary to initiate a discussion on the above subject.

Mr. W. S. Gordon said : The present system of grading milk has been receiving considerable attention of late from numerous bodies and all seem to be agreed that the present designations are confusing.

In our own profession the Section of Veterinary State Medicine discussed the question fully at the National Congress in Ayr this year and a resolution has gone forward to the Council to the effect that :—

(a) There be three grades of milk—(1) milk from cows which have passed the tuberculin test, (2) milk from other cows, (3) pasteurised milk.

(b) That the above resolution be forwarded to the Council of the Association in order that appropriate designations may be decided upon and further action taken.

The purpose of bringing the matter before this meeting to-day is to hear the views of the members with regard to this subject, and, if we are all in agreement, to support this resolution. There seems to be entire agreement in our profession that the present system of grading milk is wrong. The producer, dairyman and public are all in difficulties. Under the present system the producer is not encouraged to go in for tuberculin tested cattle as the graded name of the milk does not sufficiently advertise it. The dairyman has difficulty in explaining to his customer why Grade A milk is not his best quality if he supplies all grades, and the consumer, unless enlightened by somebody, thinks that the best milk has been obtained when Grade A milk is purchased.

At the World's Dairy Congress in 1928 Sir George Newman described the designations as unhappy, uncomfortable, inconvenient and confusing, and yet no steps have been taken to rectify this.

The agricultural correspondent of the *Times* expresses the view that the classification of milk is urgently in need of improvement and further adds that Sir George Newman recognises that the Ministry of Health are not the proper body to tackle the problem and asks the producers themselves to devise and suggest names for the different grades. He also adds that the practicability of the plan primarily affects the producer and should have his sanction.

While the Ministry of Health must to a certain extent consider the practicability of any new designations, their primary function is the safeguarding of public health, and their duty first lies with the consumer. They cannot be said to be doing this while they allow a milk to be called Grade A when it should really be labelled Grade C under a proper system, and this has been very strongly pointed out by another writer to the *Times*.

Under the present designations Certified and Grade A T.T. milk do not get the credit and advertisement they deserve. One feels that the producers of these two grades would welcome a properly-graded systen, and it does not seem reasonable that they should be handicapped by their inferior, the present Grade A, enjoying a name which immediately makes it rank first in the mind.

I beg, Sir, to propose that we, as a Division of the "National," unanimously support the resolution of the Section of Veterinary State Medicine :—

(a) That there be three grades of milk—(1) milk from cows which have passed the tuberculin test, (2) milk from other cows and (3) pasteurised milk.

(b) That the above resolution be forwarded to the Council of the Association in order that appropriate designations may be decided upon.

In reply to Mr. Hugh Hogben, the HON. SECRETARY said that they were not asked to suggest names for the different classes embodied in the resolution sent forward to the "National" Council at Ayr : that was left to the discretion of that Council. What they were asked to do was to express their opinion on the suggested grading.

Mr. SPICER was of opinion that the classification suggested in the resolution was rather weak, and that the first grade should be divided into clean milk from tuberculin-tested cows, and milk from tested cows, without any qualification. It was absurd to suppose or suggest that there was not a great difference between Certified milk and Grade A (Tuberculin-tested) milk ; there was really no comparison between the first and milk that might carry germs by the thousand.

Major PUGH said that the gravest feature of the present designations was the error into which they led the consumer in regard to Grade A milk : invariably the consumer believed that in purchasing that milk he was securing the best that could be procured. He thought that Mr. Spicer's objection would be overcome if they divided the grades into A, B and C. Grade A (Certified) would go in as A, and B milk would simply mean milk from cows which had passed the test : leaving C as milk from other cows, and then pasteurised milk. But he could support what Mr. Spicer had said in regard to Grade A (T.T.) milk and its inferiority to Certified milk. He would, therefore, like to support Mr. Spicer's recommendation.

Mr. SPICER moved, as an amendment, "That the South Eastern Division, N.V.M.A. agrees in principle with the proposal that there shall be three grades of milk, as recommended in the N.V.M.A.'s resolution to Council, but is of opinion that the first grade should be sub-divided into (a) clean milk, and (b) milk without any qualification."

The amendment was seconded by Major DUNKIN and carried unanimously. Then, put as a substantive resolution, it became the finding of the meeting.

SCHEME FOR THE ERADICATION OF BOVINE TUBERCULOSIS.

A discussion on this scheme, which had been put forward by the West of Scotland Division, N.V.M.A. and sent down to Divisions by the Scottish Branch for discussion and report, was opened by the President. [The text of the scheme was published in the *Veterinary Record* of September 21st, 1929, p. 818.—ED.].

Mr. HENRY TAYLOR said : This scheme was reported on page 818 of this year's *Veterinary Record* (Sept. 21st), and at the outset it is stated that the scheme "*was prepared* by a committee of the West of Scotland Division" and that it is now put forward as a basis of discussion. I wish to enter a protest against the wording of that paragraph because, if you will read carefully through this scheme you will see that it has been copied from some other scheme and they have not acknowledged its authorship.

Recently I have been in Canada, and I called on the Head of the Ministry of Agriculture Department at Winnipeg, Dr. J. B. Still, who has under him some twenty-three veterinary surgeons, and has areas under his administration which are now practically free from tuberculosis. I also called on the Veterinary Director General at Ottawa, Dr. George Hilton, who corresponds to our Chief Veterinary Officer, and discussed with him and also with his Chief Assistant, Dr. A. E. Cameron, the principles upon which they work. They have "Accredited Herds," on a system which has some similarity to the Accredited Herd Scheme of the West of Scotland Division, and they have also a second classification, which is called the "Restricted Area," together with other methods under the Municipal Tuberculosis Order, which assists cities and towns in controlling tuberculosis in the cows supplying it with milk. Their Accredited Herd is a herd chiefly for the dissemination of pedigree stock to improve the grade herds, which are entirely free from tuberculosis and are, of course, kept so by the application of the tuberculin test.

Then they have a Restricted Area definition : an area in which two thirds of the cattle owners are in favour of having their cattle tested. Movements of cattle are under certain regulations, and where there is no influx or eflux of animals except under supervision.

The question arises, what is the amount of tuberculosis found in these districts ? The conditions vary very much. In England probably 30 per cent. of cattle in dairy herds are infected with tuberculosis ; in Canada it is much less. I have an article here by Dr. Cameron on the prevalence of tuberculosis in Canada, in which he sums up the position thus : "It would, therefore, appear to be justifiable to estimate that bovine tuberculosis infection in Canada at the present time does not exceed five per cent."

Under their Accredited Herd Plan 368,887 cattle had been tested up to March 31st, 1928. You see that the above divisions are very much like what the West of Scotland Division have stated, and I think they should have acknowledged the origin of their scheme.

Mr. PUGH : The similarity may have been pure coincidence.

The PRESIDENT : It may have been. But the term 'accredited' is not generally applied to a tuberculin-tested herd in this country. Let us see, then, if we could apply these Canadian methods to this country. In Canada

there were 3,232 accredited herds, and more were in preparation. The definition of an Accredited Herd is one "in which no animal affected with tuberculosis has been found upon two annual or three semi-annual tuberculin tests and by physical examination."

In the Carmen District of Manitoba they have an area which is almost free from tuberculosis, the last test of 22,892 cattle showed only 0·44 per cent. affected, and *what they could do over there we could do, if we apply the same methods.* In almost every Province of the Dominion there are Restricted Areas nowadays.

For that reason I think the scheme we have before us is on the right lines, and that we can approve of the principle of it. As far as the cost is concerned, that does not enter into it at the beginning.

With the first part of their scheme I think we are all in agreement. Paragraph three says: "It is essential that the tuberculin used should be supplied by, and its quality certified by, the Ministry of Agriculture." Paragraph four says: "the possession of tuberculin by laymen should be prohibited," and paragraph five: "the preliminary work of eradication is to be done by the local practitioner."

Mr. HOGBEN here remarked that, while they might not find any fault with that idea, in (4), he did not think that such a provision could be enforced, while Mr. SPICER observed that he knew of one man, who was not a client of his, who had all his tuberculin brought over from the Pasteur Institute in Paris by aeroplane, and gave it to his cowman to use.

The PRESIDENT, proceeding, said that a restricted area was one in which a majority of two-thirds of the owners were in favour of having their cattle tested, and they then made application to the authorities and the thing was enforced. Whether or not that could be done in this country he was not prepared to say: our farmers would probably grumble, because in many cases they obtained their cattle from some other county, which would probably not have the regulation in force. He might, however, quote Dr. Cameron again: "What is known in Canada as the Restricted Area Plan was initiated in 1922 and this is believed to be the most logical and satisfactory method of controlling tuberculosis. It is not subject to the caprice of the owner as are plans dealing with individual herds and the stockowner is free from the probability of infection from his neighbour's cattle."

There are two or three difficulties about the scheme, continued Mr. Taylor. On page 818 you will see that it mentions about the removal of reactors. To where shall they be sent? In Canada each reactor is branded with a punched-out T, so large that there is no subsequent difficulty in recognising the animal. Then again, I do not see that the suggested scheme for the putting up of temporary structures is workable. It is going to cost a lot and I do not think the farmers will agree to it.

All the same the scheme is well worthy of consideration, but I should like to suggest that the Canadian method of the establishment of restricted areas should be investigated first.

With regard to the test, over in Canada they do not agree with our subcutaneous method, but generally employ the skin test, and in the caudal fold, not in the neck.

I presume that in the United States a similar scheme prevails and the number of animals that they test in a year is quite extraordinary. I will quote from the Summary of the Tuberculosis Eradication Work, which is issued by the Animal Research Bureau, Washington, May, 1929. This summary states that a quarter of a million herds, comprising 2,193,337 cattle were waiting to be tested. All the cattle in North Carolina have been tested. The tuberculin test for the month =1,193,000.

The fact that testing is done on such a scale proves that it is the right thing to do. The reading of the caudal fold reaction in Canada is made at 96 hours and, in doubtful cases, again at 120 hours. The swelling is only a comparatively small one, and the test is much more easily accomplished than when the injection is made in the neck. One inspector told me that he could do hundreds a day, and that every reacting animal was killed, so that the test is constantly being put to the strictest possible investigation of its value and accuracy—that of *post-mortem* examination. There cannot be much wrong with the caudal fold method, therefore.

Replying to Mr. Hogben, the PRESIDENT referred to the existence of a Municipal Tuberculosis Order. The milk supply of a town like Winnipeg was divided into two classes: (1) raw milk from tuberculin tested cows and (2) pasteurised milk. The herds came under the Supervised Herd Plan, as it was called, in which the herd must not be allowed to mix with untested cattle.

Mr. DIER asked if it was compulsory to have the cows tested, to which the PRESIDENT replied that cows producing the pasteurised milk need not be tested at all, but it was of course universal testing to which they were desirous of working up. At the present time they had just the two classes.

Did the members of that Division approve of the principle of the scheme?

Mr. PUGH said that while the scheme before them was similar to that which obtained in Canada, he did not think it could be called the same. Those desirous of devising a scheme would naturally consult all the information available, particularly that concerning methods of dealing with a problem which had met with a great measure of success. It was, to his mind, dangerous to suggest that the Scottish people had adopted the Canadian method without acknowledgment.

Mr. SPICER remarked that surely the Americans had tried it out years before the Canadians; they had done so with the use of the ophthalmic test.

The PRESIDENT replied that the Americans and the Canadians had been working hand in hand in the matter.

Mr. ROBERTS asked what the Scottish scheme had to say about compensation, the PRESIDENT replying that reactors for which the owner refused to accept £50 must be marked.

Mr. HUGH HOGBEN expressed the opinion that there were two great advantages in the Scottish scheme; in the first place, that it employed the practitioner, and, secondly, that money was to be supplied to those people who were willing to carry out the scheme.

Mr. DIER was of opinion that the West of Scotland scheme was a very good one and, as such, was deserving of their support, but unless testing was made compulsory

throughout the country he did not think it was going to succeed.

The HON. SECRETARY said that, by this scheme, a very gradual beginning would be made in the great task of eradicating bovine tuberculosis. It was proposed to commence in a very small area, and then they could see the effect of that method of eradication. He did think that a movement such as that should be supported, because it was definitely a step in the right direction in endeavouring to eradicate tuberculosis from the cattle of the country. They had, of course, to get the scheme properly elaborated before it could be carried out, and they must get some support from the Divisions and from veterinary surgeons in order to get the scheme set going.

Major DUNKIN: I move: That the South Eastern Division of the N.V.M.A. accepts the principle of the Scheme.

Mr. HUGH HOGBEN seconded the motion, which was carried unanimously.

Canine Distemper Prophylaxis. A discussion on the results of the new method of prevention of canine distemper was opened by Major T. DALLING, and occupied the greater part of the remainder of the afternoon. [Major Dalling's opening paper and the remainder of the discussion are reproduced earlier in this issue of the *Record*.—Ed.]

Next Meeting. The next meeting of the Division is the Annual General Meeting, and it was decided to hold it at Tunbridge Wells.

Exhibit. The members were greatly interested in the new Danish Embryotome, which was exhibited by Mr. SPICER, who explained its construction and use. [For a description of this instrument, with comments concerning its employment, we would refer our readers to the article by Mr. J. Birtwistle which appeared in the *Veterinary Record* of September 7th last (Vol. ix., No. 36, pages 751 and 752).—Ed.].

A highly-successful meeting terminated with the passing of hearty votes of thanks to those who had introduced subjects for discussion, and to the President for his conduct in the Chair. W. S. GORDON, *Hon. Secretary.*

Derbyshire Division, N.V.M.A.*

A meeting of the above Division took place at the County Agricultural Institute, St. Mary's Gate, Derby, on 11th July, 1929, when there were present the President (Major Bagshaw), Messrs. A. Levie, H. W. Steele-Bodger, H. S. Cockburn, E. Wilkinson, W. J. Ironside and, by invitation, Mr. J. R. Bond.

The circular convening the meeting was taken as read.

A discussion took place regarding the venue of the next meeting and it was decided, as an experiment, to hold this at the County Agricultural Institute at 6-30 in the evening.

The President then called on Mr. E. WILKINSON to read a paper on "Bovine Mastitis."

At the conclusion of the paper the President invited a discussion. [Both paper and discussion are reproduced earlier in this issue of the *Record*.—Ed.]

Mr. Wilkinson having replied, the PRESIDENT, on behalf of the members, thanked him for his opening address, which had stimulated a good and useful discussion. A vote of thanks to the President for his conduct in the Chair terminated the meeting.

O. V. GUNNING, *Hon. Secretary.*

* Received on 5th November, 1929.

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Dec. 2nd—Meeting of the Editorial Committee, N.V.M.A., 10 Gray's Inn Square, London, W.C.1, at 4-30 p.m.

Dec. 4th—Meeting of the Scottish Metropolitan Division at the Royal (Dick) Veterinary College, at 2-30 p.m.

Dec. 16th—Annual Dinner of the Central Division, N.V.M.A., at the Criterion Restaurant.

CENTRAL VETERINARY SOCIETY.

We would like to draw the attention of Fellows of the Central Veterinary Society to the fact that the Annual Dinner is to be followed this year by a Dance, and that speeches are to be reduced to an absolute minimum. As this arrangement is quite an innovation, the Society are very anxious that the fullest support should be afforded, and that applications for tickets should be forwarded early in order to avoid disappointment.

DEATH OF MAJOR J. J. HEGARTY.

It is with regret that we have to announce the death of Major J. J. Hegarty, which occurred at Quetta, India, on the 12th November, 1929, from pneumonia.

The deceased officer graduated in Dublin on the 28th August, 1913, was appointed to the Special Reserve, R.A.V.C. on the 9th September, 1913, and promoted Captain on the 9th September, 1914; gazetted to the Regular R.A.V.C. in the rank of Captain on 18th November, 1917; promoted Major on 25th March, 1929.

Major Hegarty served in France and North Russia during the Great War, and was awarded the 1914 Star and Bar, British War Medal and Victory Medal.

His death at the early age of 37 years is deeply regretted by all his brother officers, and they tender their deepest sympathy to his widow in her sad bereavement.

ARMY VETERINARY SERVICE.

MOVEMENTS OF OFFICERS.

Major P. Howard sailed for India, for a full tour of service abroad, on the 15th October.

Major H. D. Lewis was posted from the Southern to the Eastern Command on the 11th November, and is now doing duty at Canterbury.

Major E. Hearne, O.B.E., sailed for Malta, for a full tour of duty abroad, on the 13th November.

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents

Report of the Departmental Committee on the Reconstruction of the Royal Veterinary College.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—From my viewpoint the findings or conclusions of this Committee are excellent. The R.V.C. cannot be in a better situation than where it has been since 1791. It is easy of access from every part of London and for that matter every part of Great Britain. Most of the great railway termini are within a quarter of a mile and the others within easy reach of it. It is on the pivot from which all traffic radiates or converges. It is surrounded by a population of some 8,000,000, near to the great show

centres of every breed of animal of whatever species, not far from the great slaughterhouses, meat and fish markets, and is close to the Zoological and Botanical gardens. It is situated in the greatest centre of scientific and practical learning and research—unsurpassed in variety, quantity and quality. It can have recourse to the great museums and libraries. It is on one of the greatest rallying grounds of peoples of all nations and races of the globe, and it is the centre to which peoples from our dominions, colonies and dependencies are attracted. Moreover, it is in the biggest city and in the heart of the greatest Empire in the world. Furthermore, there are more animals of whatever species within a radius of 20 miles of the R.V.C. than in any other space of the same latitude or longitude anywhere in Great Britain. In consequence, what better position could it require? What other town or city could give it better facilities for the acquisition of knowledge or, if desired, even of pleasure?

Now all the R.V.C. requires to make it what it might be is a good Board of Governors with wide views to organise it on an up-to-date basis, to co-ordinate it with the other centres of learning and research and to make the best use of the opportunities with which it is so lavishly surrounded. It must, however, enlist the support of the profession and of the animal industry of whatever branch. Do not let us complain of our means.

Even with all the facilities that a properly organised and equipped veterinary college may offer, it is not going to make a whole or complete practitioner, but it would place his knowledge and skill on a much firmer basis than it has been hitherto. To make him a finished practitioner necessitates a vocational apprenticeship with a general country practitioner who could give him individual attention and make him think and act for himself, so that he may become self-reliant and have confidence in his performances. No institution, howsoever well equipped, is going to give a man brains if he does not possess any. Very often great men have made institutions, but no institution has yet made a great man.

In conclusion, if the R.V.C. does not take advantage of the opportunities which are offered it, it should not blame its situation and surroundings, which are as good as, if not better than, they were in 1791 when it first occupied the ground on which it now stands. There is, if necessary, plenty of space towards the heavens which look down upon it. No doubt its Governing Body will adopt the attitude of Oliver Twist and take all it can get and then ask for more, which is typical of English character as evidenced by the great Empire it has built up from small beginnings and by venture and perseverance. Let us not forget that the College was founded as a London institution and has all along been known as the Royal Veterinary College of London, from which all other veterinary colleges in English-speaking countries sprang. It has therefore tradition behind it. Do not let us forsake the substance for the shadow. HENRY GRAY.

(One of a family of four generations who have been trained at the Royal Veterinary College, London).

November 23rd, 1929.

Destruction of Pathological Specimens at the Royal Veterinary College.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I understand that inquiries have been made with regard to the recent destruction of certain pathological specimens at the Royal Veterinary College, and, as the matter is one possessing interest for the whole profession, I shall be glad if you will allow me sufficient space in your columns to state the relative facts.

Nearly forty years ago I first had the ambition to form what was certainly at that time non-existent in this country, *viz.*, a collection of specimens representative of diseased organs and tissues from the domesticated animals. It was hoped that in the course of time there could thus be formed a wealth of material that would be of great value for teaching and research in veterinary pathology, more particularly morbid anatomy and histology. The specimens were fixed and preserved in one or other of the generally approved methods, and eventually about 4,000 had been added to the collection. During its growth, however, many of the older specimens were discarded in favour of newer and better ones of the same kind, with the result that in 1927 the total number was a little over 2,000. Almost every type of disease and lesion was represented in the collection at that date, and many of the specimens were of great value on account of their rarity. On my retirement in September, 1927, the collection passed into the custody, but not the possession, of Professor Hare, and I am informed that soon afterwards it was destroyed by his orders. Yours faithfully, J. MCFADYEAN.

Veterinary History.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—As one interested in the History of the Veterinary Profession, may I be allowed to express my pleasure at the decision of the Editorial Committee to publish weekly extracts from the *Veterinarian* of 100 years ago. No one can read these extracts without agreeing that the profession had excellent teachers, even in those days. I write this letter with a two-fold object. First, to attract the attention of those readers who might otherwise pass over, as out of date old rubbish, these illuminating extracts. Second, to remind all veterinary surgeons that in the form of monthly supplements to the *Veterinary Journal*, there is now being published the third Volume of the late Sir Frederick Smith's "*History of Veterinary Literature.*" These supplements should be carefully preserved, as when complete they will constitute a volume whose value will go on increasing. This can safely be said of all Sir Frederick Smith's historical works. A few copies of Volume II. are, I believe, still available. Volume I. of the History is already out of print. His "History of the R.A.V.C." (of which there are still some copies unsold) will soon become a very rare volume, for only a limited number were printed. If veterinary surgeons had an eye on the future value of these works, there would be a rush to secure the remaining copies. Yours faithfully, FRED BULLOCK.

Royal College of Veterinary Surgeons,
10 Red Lion Square,
London, W.C.1.
November 25th, 1929.

"Hysteria," "Hyperkinesia," or "Hyperkinetia?"

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Much interest is at present being centred around a type of disorder of the dog commonly known as "Hysteria."

This name may satisfy those of us who are fond of the use of a simple single word. The American, never to be ousted from his inventive sphere, appears to have named this disorder "Hyperkinesia." Now this compound word is a curious name for a disease. According to Gould's "Dictionary of Medical Terms," "Kinesia" is defined as "Motion-cure," so we now have a disease named as a cure!! On the other hand, "Kinetia" is given as "Motion-disease." This, so far, is plain sailing.

But if one looks up Dorland's Dictionary we find under the term "Kinesia" also the word "Kinetia" given as an alternative spelling and they both mean "Motion-disease."

So, after all, the American is correct as judged by himself! Yours truly, HARVEY S. PURCHASE.

Roycot,
Fordwater Road,
Chertsey,
Surrey,
November 25th, 1929.

The Editor acknowledges the receipt of the following:—

Report of a meeting of the Midland Counties' Division, N.V.M.A., from Mr. H. J. Dawes, Hon. Secretary.

Communications from Messrs. W. Caudwell (Bournemouth), W. R. Davis (Enfield), Lieut.-Col. A. G. Doherty (Kilcullen).